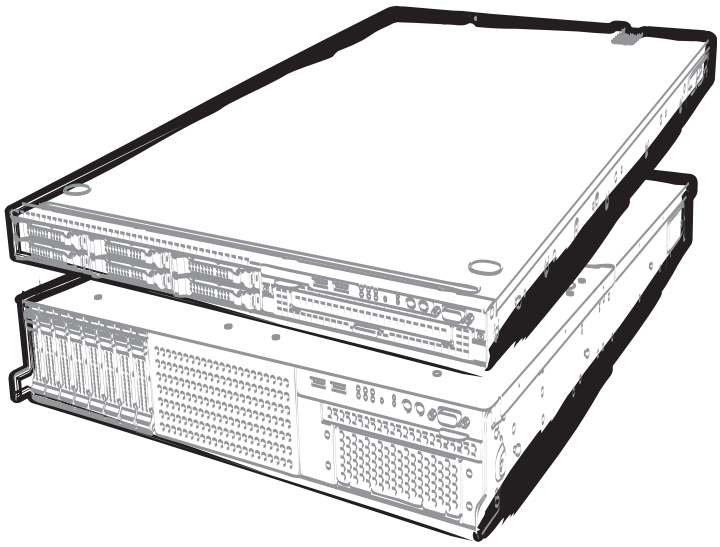
Express5800

NEC



NEC Express Server
Express5800 Series

Express5800/R120e-1M, R120e-2M
EXP291, EXP292
Installation Guide (Windows)

Chapter 1 Installing Windows

Chapter 2 Installing the Bundled Software

10.102.01-102.01
July 2013, First Edition

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Documents Provided with This Product

Documents for this product are provided as accompanying booklets (📖) and as electronic manuals (PDF) stored within the EXPRESSBUILDER DVD (💿).

📖 Precautions for Use	Describes points of caution to ensure the safe use of this server. **Read these cautions before using this server.**
📖 Getting Started	Describes how to use this server, from unpacking to operations. Refer to this guide as you begin for an overview of this server.

💿 EXPRESSBUILDER

PDF User's Guide

Chapter 1: General Description	Overviews, names, and functions of the server's parts
Chapter 2: Preparations	Installation of additional options, connection of peripheral devices, and ideal location for this server
Chapter 3: Setting Up Your Server	System BIOS configurations and summary of EXPRESSBUILDER
Chapter 4: Appendix	Specifications and other information

PDF Installation Guide (Windows)

Chapter 1: Installing Windows	Installation of Windows and drivers, and important information for installation
Chapter 2: Installing the Bundled Software	Installation of bundled software, such as NEC ESMPRO and Universal RAID Utility

PDF Maintenance Guide

Chapter 1: Maintenance	Server maintenance and troubleshooting
Chapter 2: Convenient Features	Useful features and the detail of system BIOS settings, RAID Configuration Utility, and EXPRESSBUILDER
Chapter 3: Appendix	Error messages and Windows Event Logs

PDF Other documents

Provides the detail of NEC ESMPRO, Universal RAID Utility, and the other features.

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Notations Used in This Document

Notations used in the text

In addition to safety-related symbols urging caution, 3 other types of notations are used in this document. These notations have the following meanings.

Important	Indicates critical items that must be followed when handling the hardware or operating software. If the procedures described are not followed, **hardware failure, data loss, and other serious malfunctions could occur**.
Note	Indicates items that must be confirmed when handling the hardware or operating software.
Tips	Indicates information that is helpful to keep in mind when using this server.

Optical disk drives

This server is equipped with one of the following drives, depending on the order at the time of purchase. These drives are referred to as *optical disk drives* in this document.

- **DVD-ROM drive**
- **DVD Super MULTI drive**

Hard Disk Drives

Unless otherwise stated, Hard Disk Drives (HDD) described in this document refer to the following.

- **Hard disk drives (HDD)**
- **Solid state drive (SSD)**

Removable media

Unless otherwise stated, removable media described in this document refer to the following.

- **USB memory**
- **Flash FDD**

Abbreviations of Operating Systems (Windows)

Windows Operating Systems are referred to as follows.

Refer to *Chapter 1* (*1.2 Supported Windows OS)* for detailed information.

Notations in this document	Official names of Windows
Windows Server 2012	Widnows Server 2012 Standard
	Widnows Server 2012 Datacenter
Windows Server 2008 R2	Windows Server 2008 R2 Standard
	Windows Server 2008 R2 Enterprise
Windows Server 2008 *	Windows Server 2008 Standard
	Windows Server 2008 Enterprise

* Includes 64-bit and 32-bit Editions unless otherwise stated.
The following appears on EXPRESSBUILDER.

- Windows Server 2008 64-bit Edition: Windows Server 2008 x64
- Windows Server 2008 32-bit Edition: Windows Server 2008 x86

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This Class A digital apparatus complies with Canadian ICES-003.

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EEE Yönetmeliğine Uygundur

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	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷线路板	×	○	○	○	○	○
HDD、DVD等	×	○	○	○	○	○
机箱、支架	○	○	○	○	○	○
电源	×	○	○	○	○	○
键盘	×	○	○	○	○	○
其他（电缆、鼠标等）	×	○	○	○	○	○

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http://www.nec.com/

NEC Express5800 Series
Express5800/R120e-1M, R120e-2M

1

Installing Windows

This chapter describes how to install Windows. Read through this chapter to set up the system correctly.

1. **Before Starting Setup**
   Describes Service Packs and mass storage controllers that support EXPRESSBUILDER attached to the server.

2. **Setting Up the Operating System**
   Describes the flow chart of setting up the operating system.

3. **Setting Up Windows Server 2012**
   Describes how to set up Windows Server 2012.

4. **Setting Up Windows Server 2008 R2**
   Describes how to set up Windows Server 2008 R2.

5. **Setting Up Windows Server 2008**
   Describes how to set up Windows Server 2008.

6. **Setting Up for Solving Problems**
   Describes the features that must be set up in advance so that the server can recover from any trouble immediately and precisely.

7. **Windows OS Parameter File**
   Describes how to set up the operating system by using the parameter file.

1. Before Starting Setup

This section describes the points of using EXPRESSBUILDER to set up Windows operating systems.

1.1 Starting EXPRESSBUILDER

Use the attached EXPRESSBUILDER to reconfigure the RAID system or re-install the OS.

Start EXPRESSBUILDER by either of the following two ways according to the media in which the EXPRESSBUILDER is stored. See *Chapter 2* (*5. Details of EXPRESSBUILDER*) in Maintenance Guide for more information.

EXPRESSBUILDER DVD

Insert the DVD to the optical disk drive of the server, and then restart the server by pressing <Ctrl> + <Alt> + <Delete> keys.

Internal Flash Memory (optional)

Press <F3> key when the following message appears on POST screen. At this time, **be sure to remove a bootable disc from the optical disk drive**.

```
Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network
```

1.2 Supported Windows OS

EXPRESSBUILDER supports the following editions of Windows operating systems:
Inquiries about installing other editions may be made at your sales representative.
See the next section (*1.3 Service Pack Support*) for Service Pack.

EB : Confirm during Setup with EXPRESSBUILDER

OS : Confirm during Setup with OS standard installer

Name of Windows OS		Supported	
		EB	OS
Windows Server 2012	Windows Server 2012 Standard	✓	✓
	Windows Server 2012 Datacenter	✓	✓
Windows Server 2008 R2	Windows Server 2008 R2 Standard	✓	✓
	Windows Server 2008 R2 Enterprise	✓	✓
Windows Server 2008	Windows Server 2008 Standard	✓	✓
	Windows Server 2008 Enterprise	✓	✓

✓ : Supported – : Not Supported

1.3 Service Pack Support

The following combination of operating system installation media and Service Packs are supported by EXPRESSBUILDER.

OS installation media	Service Pack	Supported
Windows Server 2012	NO Service Pack	✓
Windows Server 2008 R2	Service Pack 1 Included	✓
	NO Service Pack + Service Pack 1	✓
	NO Service Pack	✓
Windows Server 2008	Service Pack 2 Included	✓
	NO Service Pack + Service Pack 2	✓
	NO Service Pack	✓

✓ : Supported – : Not supported

Note You can install the Service Pack on the server. When the Service Pack is not attached to your system, prepare it by yourself.

1.4 Mass Storage Controllers Supported by EXPRESSBUILDER

The table below lists the controllers for this server, supported by the attached EXPRESSBUILDER.

If an optional board not mentioned below is connected, set it up while referring to the instructions supplied with the board and *Chapter 1 (1.5 Using a Mass Storage Controller Not Supported by EXPRESSBUILDER*).

	Windows Server 2012	Windows Server 2008 R2	Windows Server 2008
RAID Controllers supporting OS installation by EXPRESSBUILDER			
N8103-172 RAID Controller (512MB, RAID 0/1)	✓	✓	✓
N8103-173 RAID Controller (512MB, RAID 0/1/5/6)	✓	✓	✓
N8103-174 RAID Controller (1GB, RAID 0/1/5/6)	✓	✓	✓
N8103-168 RAID Controller (1GB, RAID 0/1/5/6)	✓	✓	✓
Other options			
N8103-142 SAS Controller	✓	✓	✓
N8103-161 RAID Controller (1GB, RAID 0/1/5/6)	✓	✓	✓
N8190-153 Fibre Channel Controller (1ch)(8Gbps/Optical)	✓	✓	✓
N8190-154 Fibre Channel Controller (2ch)(8Gbps/Optical)	✓	✓	✓

✓: Supported by EXPRESSBUILDER

1.5 Using a Mass Storage Controller Not Supported by EXPRESSBUILDER

To install the Windows when using a mass storage controller not supported by EXPRESSBUILDER such as the newest RAID controller, follow the steps below.

You do not need to perform the following instructions usually.

1. Have the instructions for the mass storage controller ready.

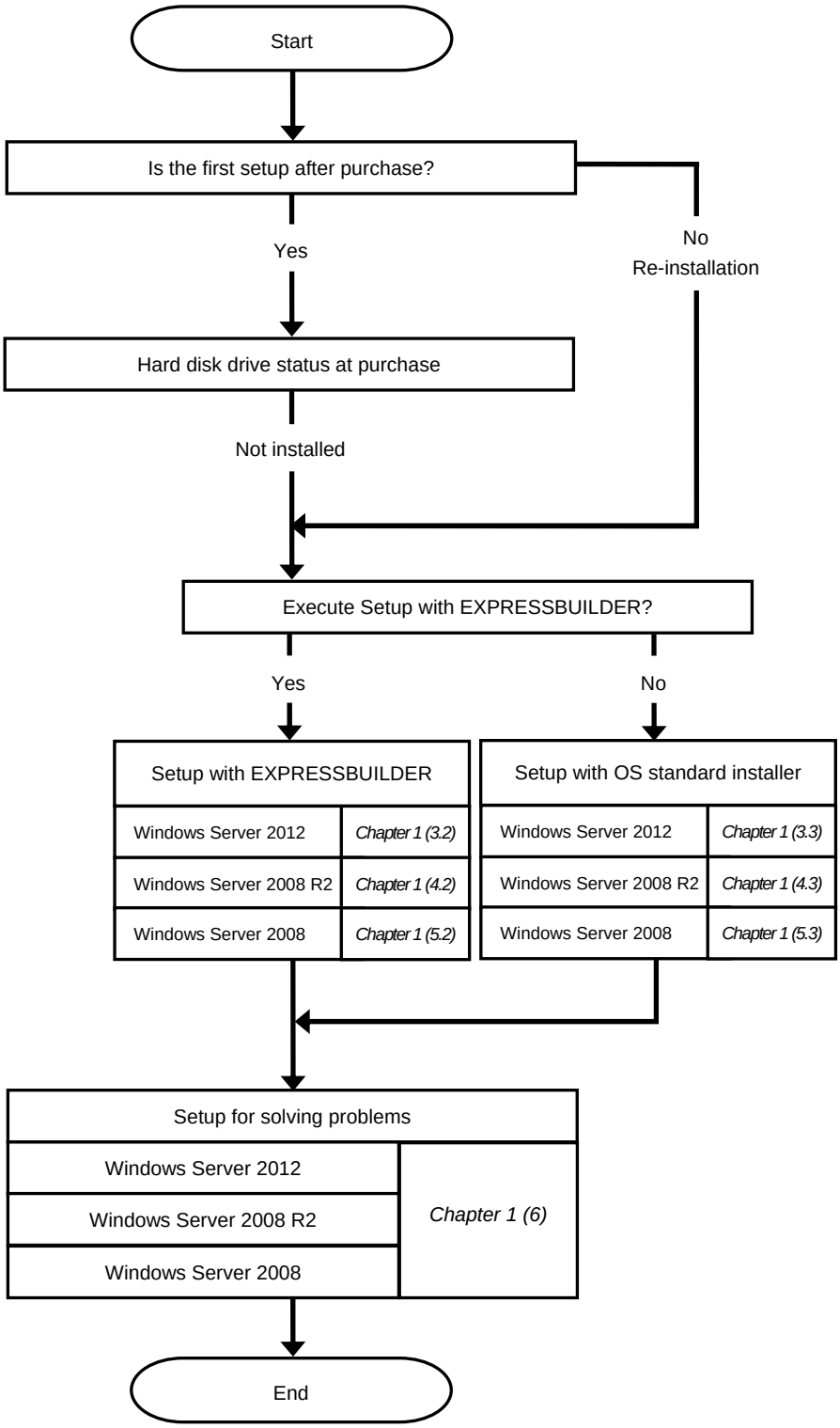
Note If the contents of this document differ from that of the mass storage controller, prioritize the contents of the controller 's document.

2. If you use a RAID controller, follow the controller instructions to configure a RAID array.

3. See *Setup with Windows Standard Installer* of each Windows family in this guide.

2. Setting Up the Operating System

See the figure below to find a section appropriate to your OS installation.



3. Setting Up Windows Server 2012

3.1 Precautions for Windows Server 2012 Installation

Read through the following precautions before starting setup.

EB : Precautions for the installation using EXPRESSBUILDER

OS : Precautions for the installation using Windows standard Installer

Precautions for hardware		
The following hardware configurations require special procedures.		
EB	OS	**Reinstalling to a mirrored volume** When you reinstall Windows Server 2012 with a mirrored volume of Windows feature, disable mirroring before installing and enable it again after the installation. Use [Computer Management] – [Disk Management] to create, disable, or remove the mirrored volume.
EB	OS	**Peripheral devices such as RDX/MO** Remove an MO device before installing. Some peripheral devices need to be halted. Refer to the manual attached to the peripheral devices .
EB	OS	**DAT, LTO, and similar media** Do not set media, such as DAT, LTO, during setup.
EB	OS	**Connecting to multiple hard disk drives or logical drives** For details about installing operating systems with multiple drives, see *Chapter 1* (*3.8 Installing With Multiple Logical Drives*).
EB	OS	**Reinstalling to hard disk drives that have been upgraded to dynamic disks** If the hard disk drive has been upgraded to a dynamic disk, the operating system cannot be reinstalled to it with the existing partitions. Set up the operating system with the Windows standard installer.

EB OS

Setup when installing with a large amount of memory

When your system installed a large amount of memory, the large paging file is required at installation and the dump file for debugging information may not be created.

If you fail to create the dump file, use Windows Standard Installer for setup, and allocate the required file space to multiple disks by the following steps.

1. Set the system partition size to a size sufficient to install the OS and paging file.
2. Specify another disk as destination to save the debug information by referring to *Chapter 1 (6. Setup for Solving Problems)*.

If the hard disk drive does not have enough space to save the debug information, set the partition size to a size sufficient to install the OS and paging file, and then add another hard disk drive for the dump file.

Note

If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.

If sufficient space cannot be allocated for the paging file, perform either of the following after the installation using Windows Standard Installer is complete.

— **Specify a hard disk drive other than the system drive as the location to store the paging file for collecting memory dump**

Create a paging file of the installed memory size + 400 MB or more in a drive other than the system drive.

The size of the paging file must be "installed memory size + 400 MB" or more. Paging files in dynamic volumes are not used for dumping memory. The setting is applied after restarting the system.

Example of correct setting
C: No paging file exists **D: Paging file whose size is "installed memory size + 400 MB" or more** → The paging file in drive D can be used for collecting memory dump because its size satisfies the requirement.

Example of incorrect setting 1
C: Paging file whose size is smaller than the installed memory size **D: Paging file whose size is "installed memory size + 400 MB" or more** → The paging file in drive C is used for collecting memory dump, but collection may fail because the size of the paging file is smaller than the installed memory size.
Example of incorrect setting 2
C: Paging file whose size is "installed memory size × 0.5" **D: Paging file whose size is "installed memory size × 0.5"** **E: Paging file whose size is 400 MB** → The total paging file size in all drives is "installed memory size + 400 MB", but collection may fail because only the paging file in drive C is used for collecting memory dump.
Example of incorrect setting 3
C: No paging file exists **D: Paging file whose size is "installed memory size + 400 MB" or more (in dynamic volume)** → Paging files in a dynamic volume cannot be used for collecting memory dump.

— **Specify a drive other than the system drive for "Dedicated Dump File".**

Create the registry shown below by using the Registry Editor and specify the name of Dedicated Dump File.

<When specifying the file named "dedicateddumpfile.sys" in drive D>

Key:	HKEY_LOCAL_MACHINE\SYSTEM \CurrentControlSet\Control\CrashControl
Name:	DedicatedDumpFile
Type:	REG_SZ
Data:	D:\dedicateddumpfile.sys

Note the following when specifying Dedicated Dump File:

- The setting is applied after restarting the system.
- Specify a drive that has free space of "installed memory size + 400 MB" or more.
- Dedicated Dump File cannot be placed in dynamic volumes.
- To collect memory dump by using Dedicated Dump File, a paging file is required in any drive.
- Dedicated Dump File is only used for collecting memory dump, and is not used as virtual memory. Specify the paging file size so that sufficient virtual memory can be allocated in the entire system.

Precautions for system partition size

EB OS

The system partition size can be calculated by using the following way.

(OS size) + (paging file size) + (dump file size) + (application size)

Server with a GUI

OS size	= 9,400MB
Paging file size (recommended)	= installed memory size × 1.5
Dump file size	= installed memory size + 400MB
Application size	= as required by the application

Server Core installations

OS size	= 6,300MB
Paging file size (recommended)	= installed memory size × 1.5
Dump file size	= installed memory size + 400MB
Application size	= as required by the application

For example, if the installed memory size is 1 GB (1,024 MB) and Server with a GUI is selected, the partition size is calculated as follows:

9,400MB + (1,024MB × 1.5) + 1,024MB+ 400MB+ application size

= 12,360MB + application size

The above mentioned partition size is the minimum partition size required for system installation. Ensure that the partition size is sufficient for system operations.

The following partition sizes are recommended.

Server with a GUI : 32,768MB(32GB) or more

Server Core installations : 32,768MB(32GB) or more

*1 GB = 1,024 MB

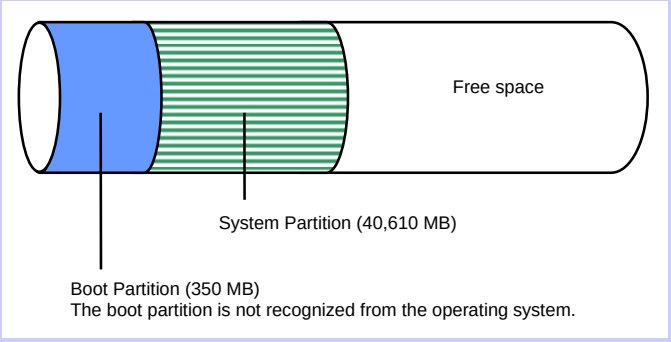
Note

- The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the Windows partition paging file must be large enough to store dump files.
  Make sure you set a sufficient paging file size. If the paging file is insufficient, there will be a virtual memory shortage that may result in an inability to collect correct debug information.
- Regardless of the sizes of internal memory and write debug information, the maximum size of the dump file is "size of internal memory + 400 MB".
- When installing other applications or other items, add the amount of space needed by the application to the partition.

If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.

Tips

When creating a new partition, Windows OS assigns an initial boot partition of 350 MB.
For example, when creating a partition of 40,960 MB (40 GB), usable space will be 40,960 MB – 350 MB = 40,610 MB.


Free space
System Partition (40,610 MB)
Boot Partition (350 MB)
The boot partition is not recognized from the operating system.

Precautions for Windows Server 2012 with Hyper-V

EB OS

Refer to the following web site for information related to Windows Server 2012 Hyper-V.
http://www.58support.nec.co.jp/global/download/w2012/hyper-v/hyper-v-ws2012.html

Precautions for using BitLocker

EB OS

Note the following precautions when using BitLocker.

- Be sure to keep the recovery password secure. Do not keep it near a server running BitLocker.

Important

If the recovery password is not entered, the OS cannot be started, and the content of the partition encrypted by BitLocker cannot be referenced any more.

The recovery password might be required at startup of the OS after the following:

- **Replacement of motherboard**
- **Initialization of trusted platform module (TPM)**
- **Change of BIOS setting**

- To reinstall the operating system into a partition that is encrypted with BitLocker, delete the BitLocker-encrypted partition prior to reinstallation.

Precautions for NIC teaming feature in Windows Server 2012

EB OS

The NIC teaming feature, which used to be provided by network interface card (NIC) vendors, is built into Windows Server 2012. In Windows Server 2012, this feature is also called "load balancing and failover (LBFO)".

See *3.9 Setup of Windows Server 2012 NIC Teaming (LBFO)* for more information.

3.2 Setup with EXPRESSBUILDER

This section describes how to install Windows with EXPRESSBUILDER.

This feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following " *User's Guide* ".

Important

- **Setup with EXPRESSBUILDER may delete all data of the hard disk drive depending on the settings. Pay attention to input parameters. You must be especially careful when configuring the following:**
  - **RAID settings**
  - **Partition Settings**

  Backing up user data, as needed, is recommended.
- **Before starting setup, be sure to disconnect hard disk drives from the RAID Controller that is not to be setup. Install those hard disk drives after setup has completed. Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally. It is recommended to make backup copy of user data before starting setup.**

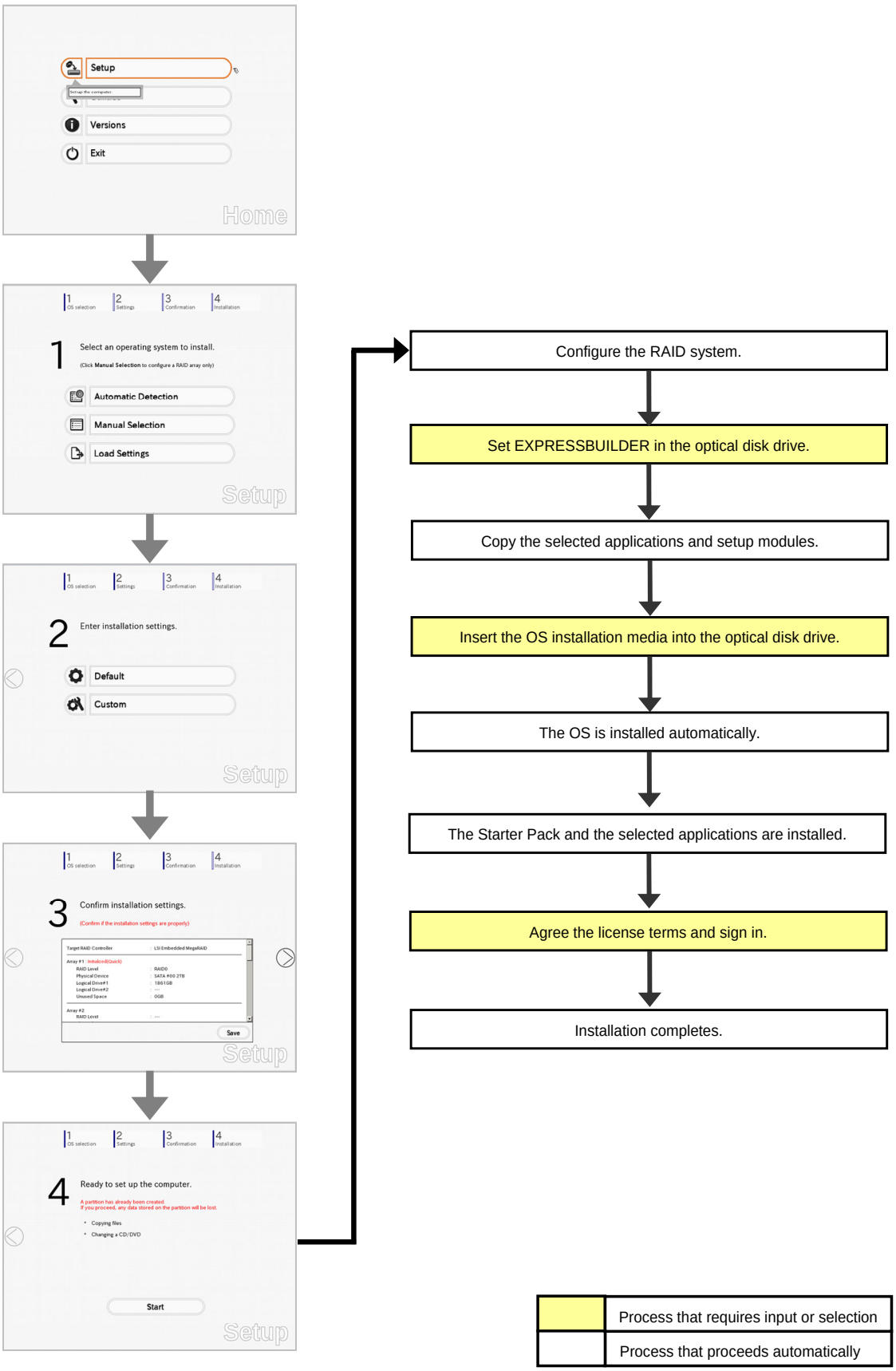
Note

- The Scalable Networking Pack (SNP) function is disabled on systems that have been installed by using EXPRESSBUILDER.
  The setting of SNP function may affect the system performance.
  Contact your sales representative for details.

Tips

- Setup with EXPRESSBUILDER allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, see *7. Windows OS Parameter File*.

3.2.1 Setup flow


Setup
Versions
Exit
Home
1 Select an operating system to install.
(Click Manual Selection to configure a RAID array only)
Automatic Detection
Manual Selection
Load Settings
Setup
2 Enter installation settings.
Default
Custom
Setup
3 Confirm installation settings.
(Confirm if the installation settings are properly)
Save
Setup
4 Ready to set up the computer.
A partition has already been created.
If you proceed, any data stored on the partition will be lost.
Copying files
Changing a CD/DVD
Start
Setup
Configure the RAID system.
Set EXPRESSBUILDER in the optical disk drive.
Copy the selected applications and setup modules.
Insert the OS installation media into the optical disk drive.
The OS is installed automatically.
The Starter Pack and the selected applications are installed.
Agree the license terms and sign in.
Installation completes.
Process that requires input or selection
Process that proceeds automatically

3.2.2 Requirements for Setup

Prepare the following disc and media and instruction manuals before starting setup.

- Either of the following OS installation disc
  - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
  - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2012 DVD-ROM*)
- Either of the following EXPRESSBUILDER
  - **EXPRESSBUILDER DVD**
  - **Internal Flash Memory** (optional)
- Prepare if needed:
  - **Removable media for Windows OS parameter file**

Tips

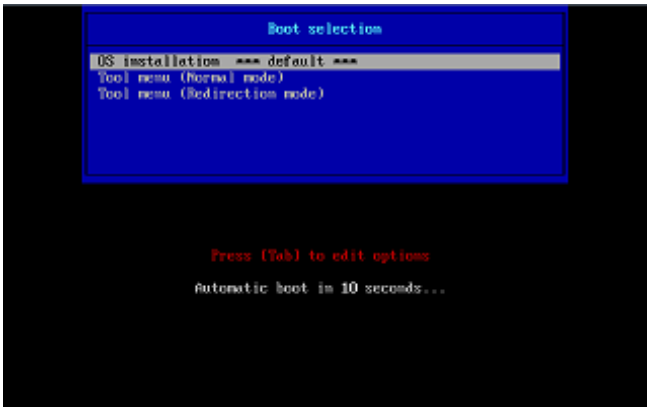
- EXPRESSBUILDER can be run from Internal Flash Memory without the DVD when it is installed in the server.

3.2.3 Setup procedure

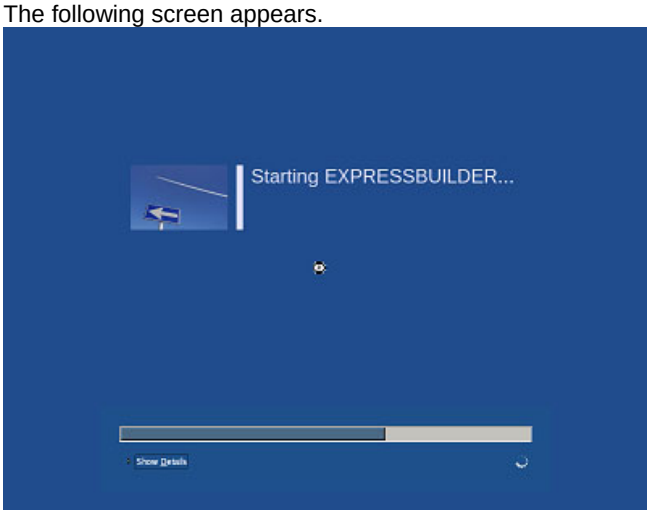
During Setup with EXPRESSBUILDER, parameters are specified through the wizard.

Note Read through the items in *Chapter 1* (*3.1Precautions for Windows Server 2012 Installation*) prior to installing Windows.

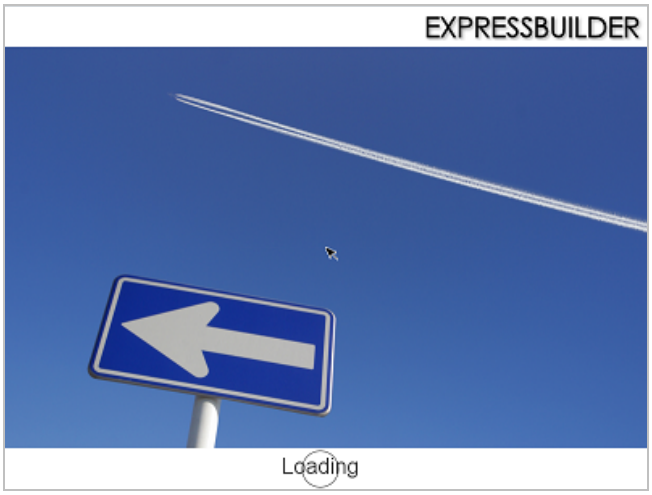
1. Turn peripheral device, such as a display, power on, and then turn the server power on.
2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.
3. Choose **OS installation** from Boot selection.


Boot selection
OS installation *** default ***
Tool menu (Normal mode)
Tool menu (Redirection mode)
Press (Tab) to edit options
Automatic boot in 10 seconds...

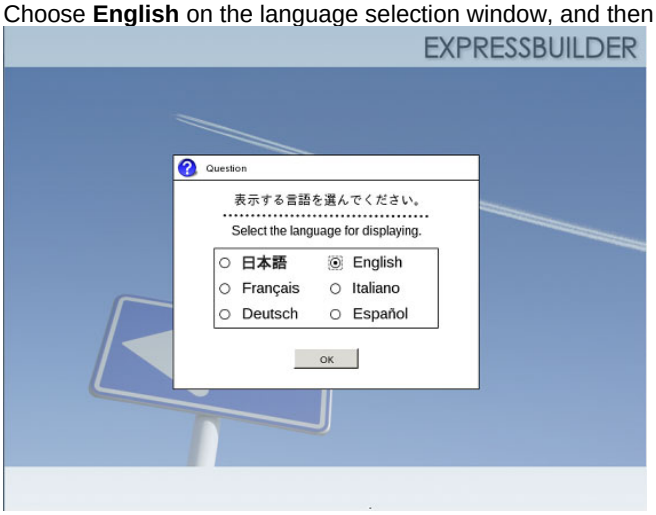
The following screen appears.



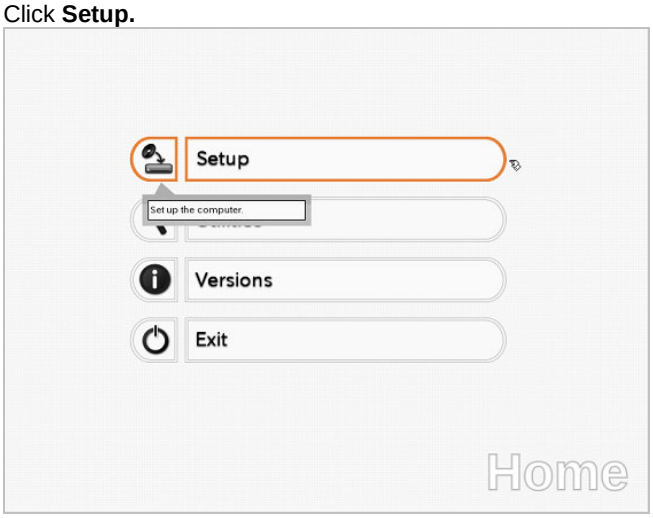
The server starts from EXPRESSBUILDER.



4. Choose **English** on the language selection window, and then click [OK].

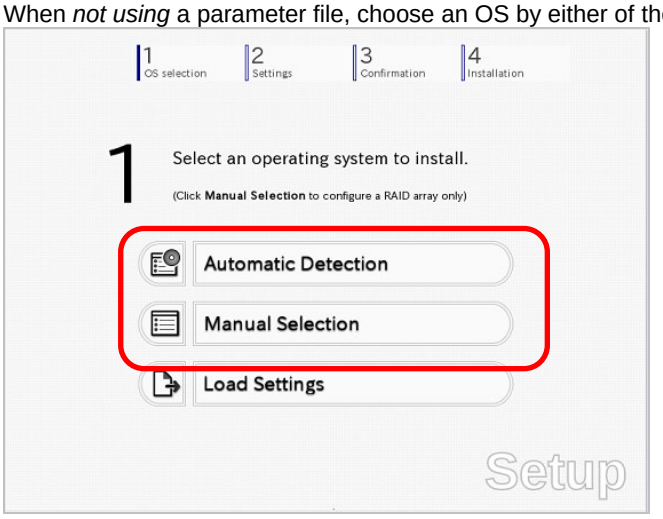


5. Click **Setup.**



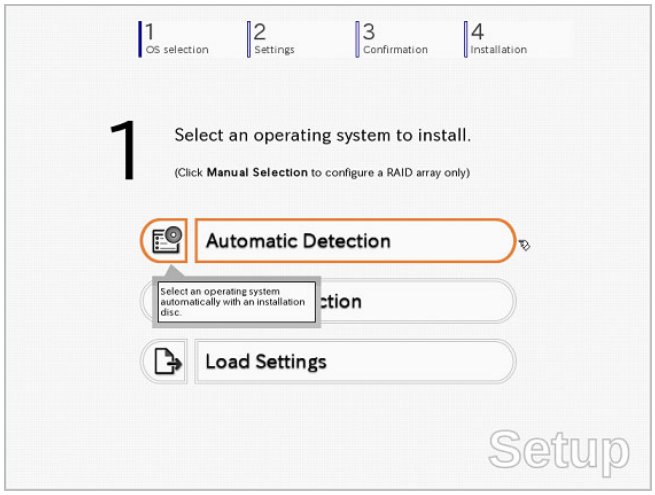
6. On the **OS selection** menu, choose the OS to install or specify the parameter file.
   ☐ Not using parameter file : Go to Step 7.
   ☐ Using a parameter file : Go to Step 8.

7. When *not using* a parameter file, choose an OS by either of the following two ways:

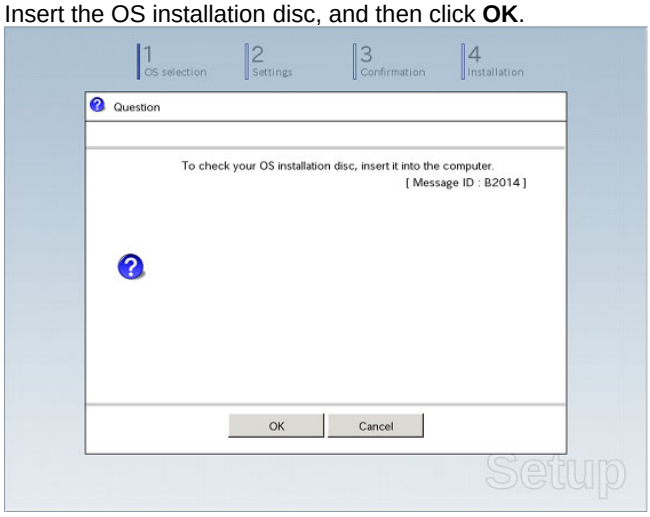


To automatically detect the OS on the OS installation disc:

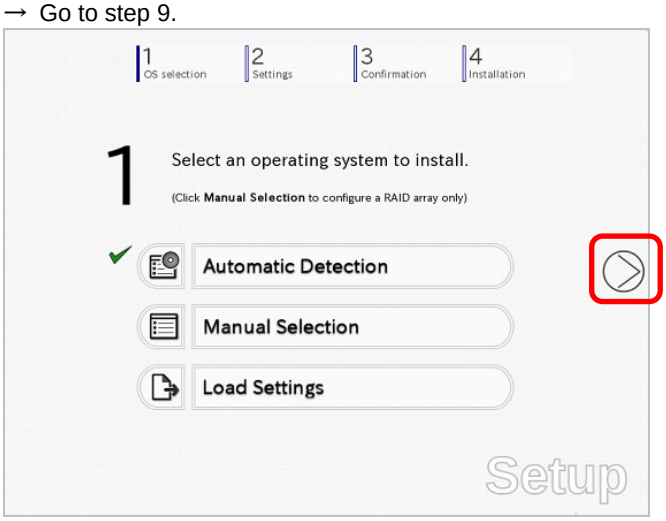
(1) Click **Automatic Detection**.



Insert the OS installation disc, and then click **OK**.

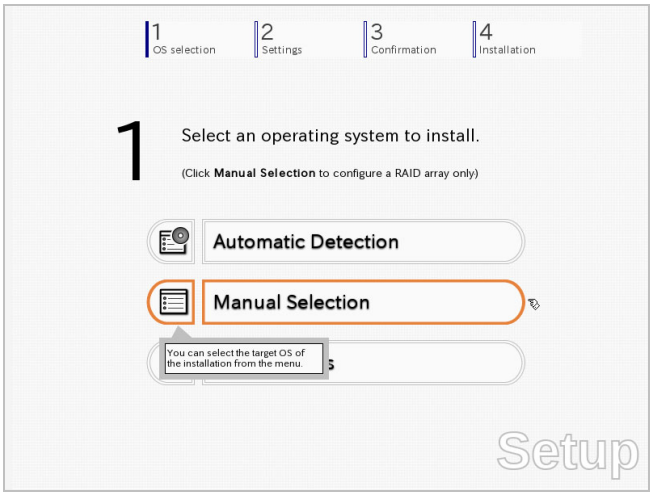


(2) Click ▷ on the right side of the screen.
→ Go to step 9.



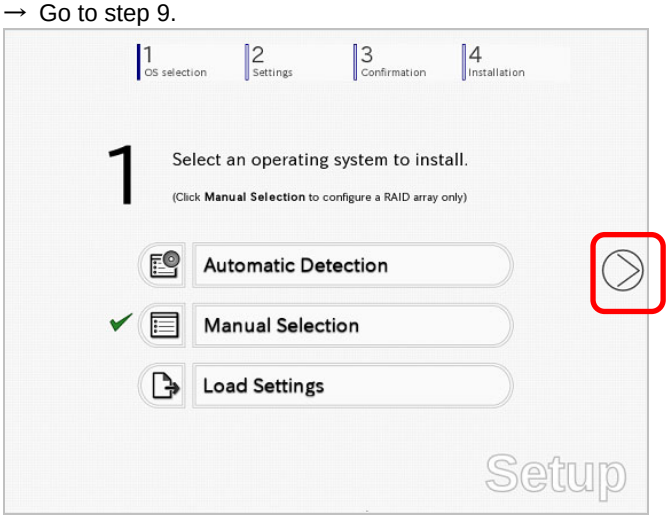
To select an OS from the menu:

(1) Click **Manual Selection**.

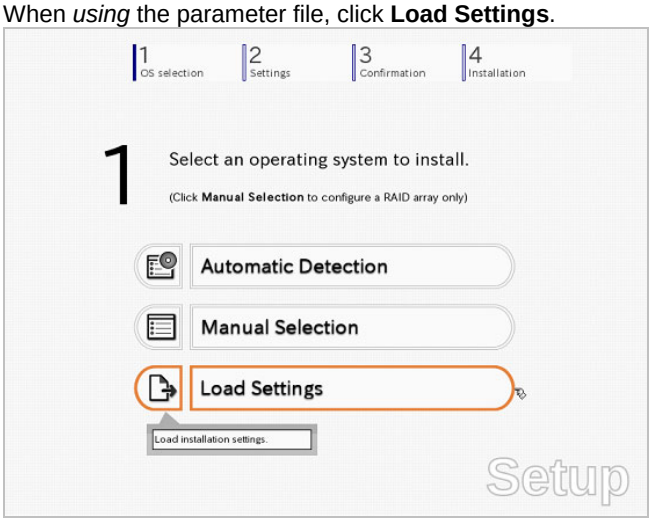


(2) From the **Windows** list, choose **Windows Server 2012**, and then click **OK**.

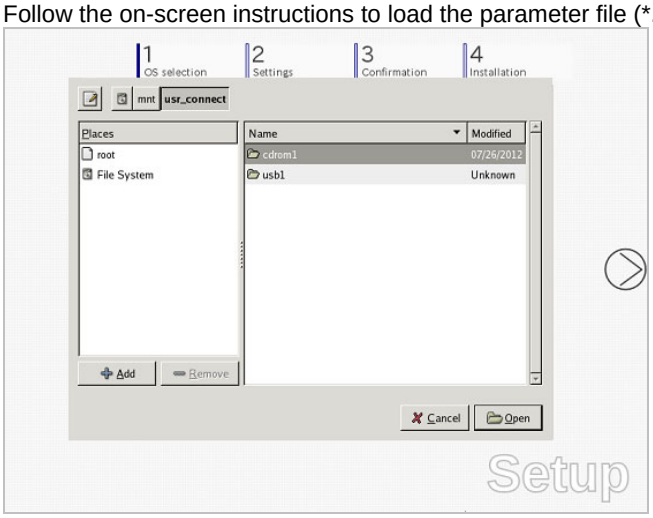
(3) Click ▷ on the right side of the screen.
→ Go to step 9.



8. When *using* the parameter file, click **Load Settings**.



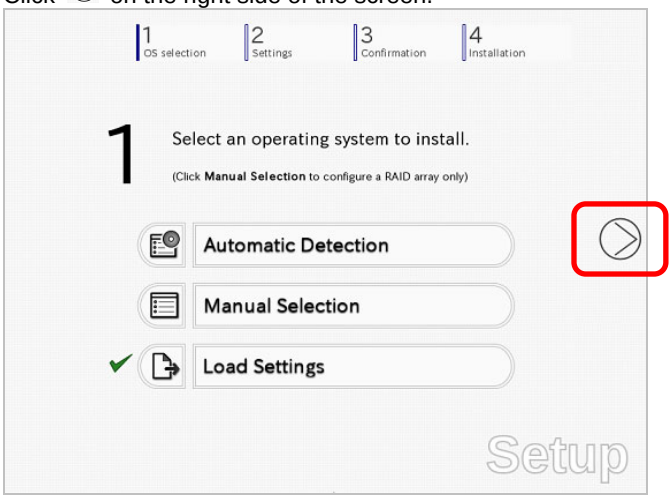
Follow the on-screen instructions to load the parameter file (*.tre).



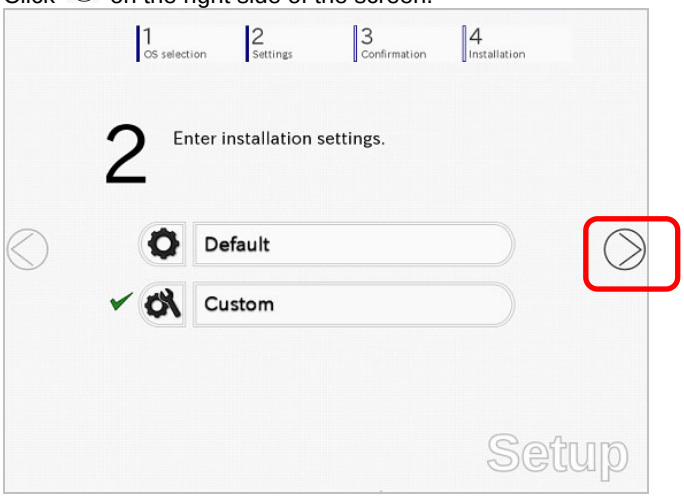
Tips

For the removable media in which the parameter file is saved, see "**/mnt/usr_connect/usb***" (* indicates a number).

Click ▷ on the right side of the screen.

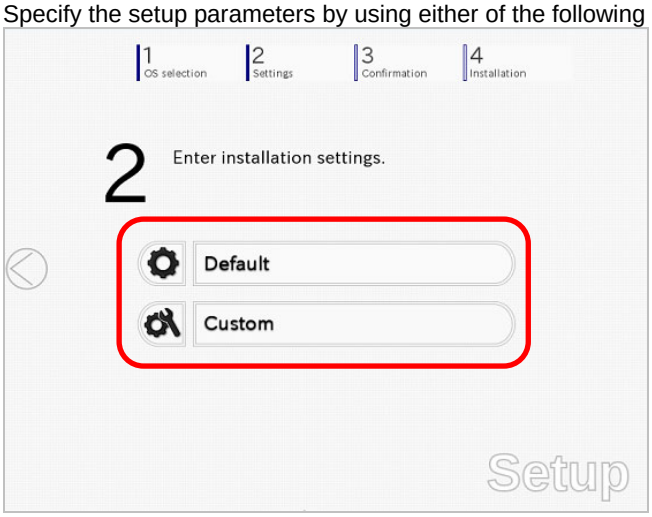


When the parameter file is correctly loaded, the settings are determined.
Click **Custom** to check and modify the settings in the wizard.
Click ▷ on the right side of the screen.



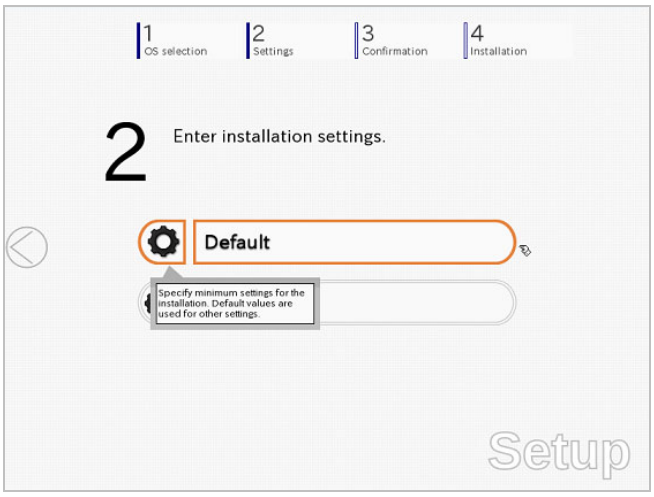
→ Go to step 10.

9. Specify the setup parameters by using either of the following ways:

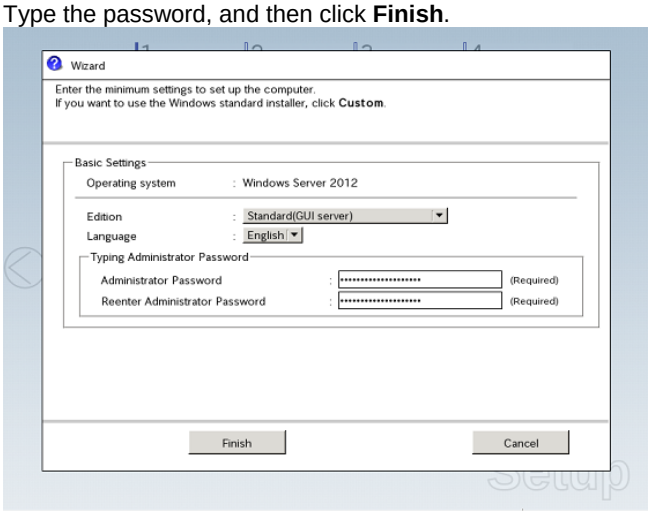


Default:

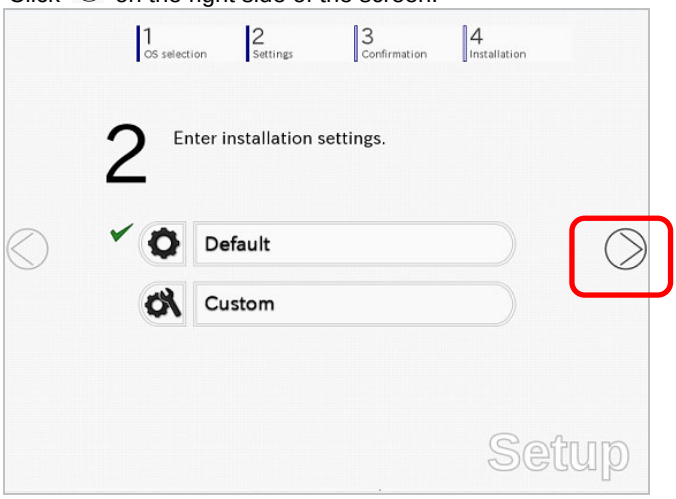
(1) Click **Default**.



(2) Choose the edition of the OS to install from the **Edition** list. Type the password, and then click **Finish**.


Wizard
Enter the minimum settings to set up the computer.
If you want to use the Windows standard installer, click Custom.
Basic Settings
Operating system : Windows Server 2012
Edition : Standard(GUI server)
Language : English
Typing Administrator Password
Administrator Password : (Required)
Reenter Administrator Password : (Required)
Finish
Cancel

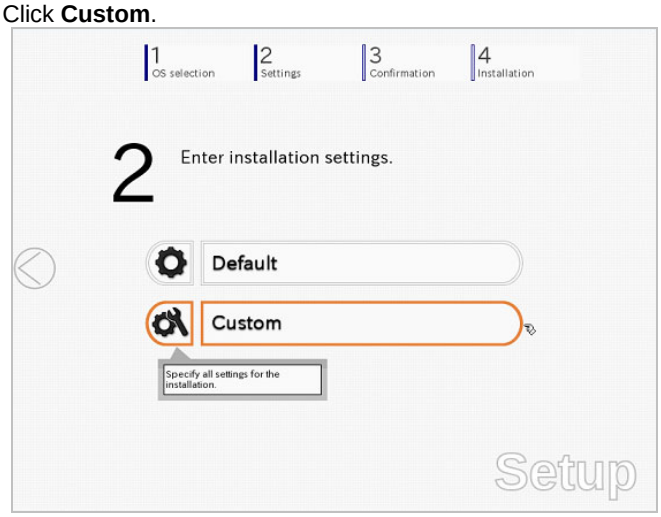
(3) Click ▷ on the right side of the screen.



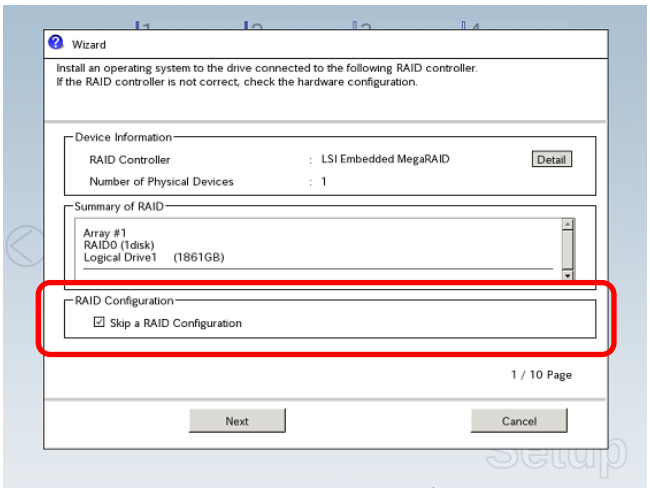
→ Go to step 10.

Custom:

(1) Click **Custom**.



(2) Use the wizard to configure the RAID system with the RAID controller detected automatically.



Creating new logical drives:

Clear the **Skip a RAID Configuration** check box and click **Next**. Follow the wizard to set up the RAID array and logical drives.

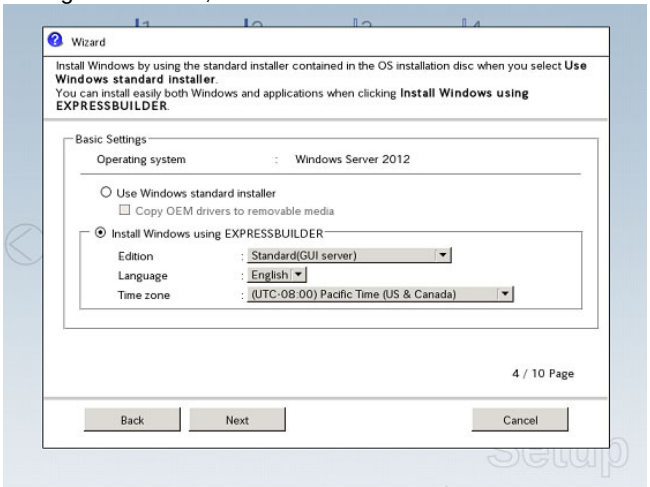
Important **The existing RAID system is cleared and all data on the hard disk drives will be lost when proceeding to the installation.**

Skipping the creation of new logical drives:

Select the **Skip a RAID Configuration** check box, and then click **Next**.

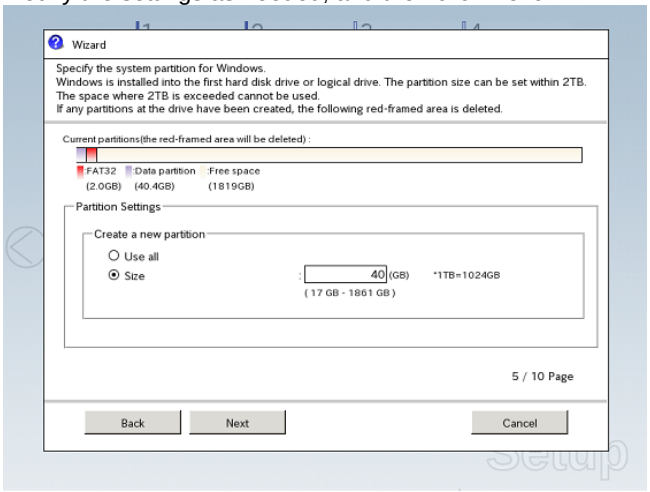
(3) Specify the settings for **Basic Settings**.

Choose **Install Windows using EXPRESSBUILDER**, modify the Edition, Language and Time zone settings as needed, and then click **Next**.


Wizard
Install Windows by using the standard installer contained in the OS installation disc when you select Use Windows standard installer.
You can install easily both Windows and applications when clicking Install Windows using EXPRESSBUILDER.
Basic Settings
Operating system : Windows Server 2012
Use Windows standard installer
Copy OEM drivers to removable media
Install Windows using EXPRESSBUILDER
Edition : Standard(GUI server)
Language : English
Time zone : (UTC-08:00) Pacific Time (US & Canada)
4 / 10 Page
Back
Next
Cancel

(4) Specify the settings for **Partition Settings**.

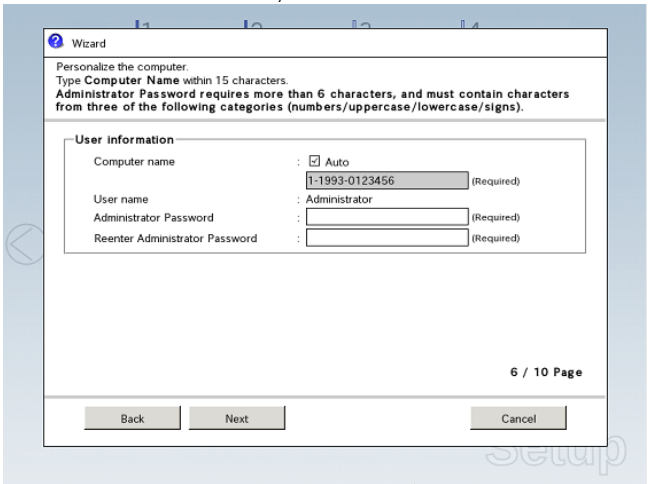
Modify the settings as needed, and then click **Next**.


Wizard
Specify the system partition for Windows.
Windows is installed into the first hard disk drive or logical drive. The partition size can be set within 2TB.
The space where 2TB is exceeded cannot be used.
If any partitions at the drive have been created, the following red-framed area is deleted.
Current partitions(the red-framed area will be deleted) :
FAT32 (2.0GB)
Data partition (40.4GB)
Free space (1819GB)
Partition Settings
Create a new partition
Use all
Size : 40 (GB) *1TB=1024GB
(17 GB - 1861 GB)
5 / 10 Page
Back
Next
Cancel

Important

- **Partition size:**
  - **Specify a partition size larger than the minimum required for installing the operating system. (See *Chapter 1 (3.1 Precautions for Windows Server 2012 Installation)*.)**
  - **The maximum partition size is 2,097,152 MB.**
- **All data on the hard disk drive will be deleted.**

(5) Enter the user information, and then click **Next**.



Note

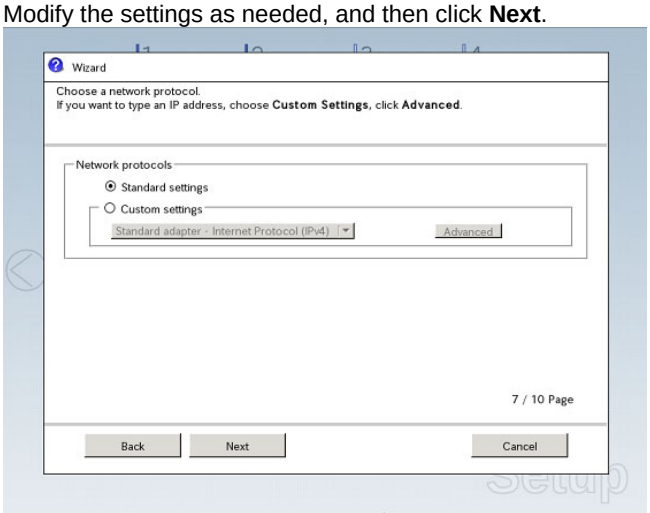
Type Administrator Password that satisfies the following requirements:

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

Tips

If you want to type a computer name without default settings, clear the Automatic Numbering checkbox.

(6) Specify the settings for **Network Protocols**.
Modify the settings as needed, and then click **Next**.



Tips

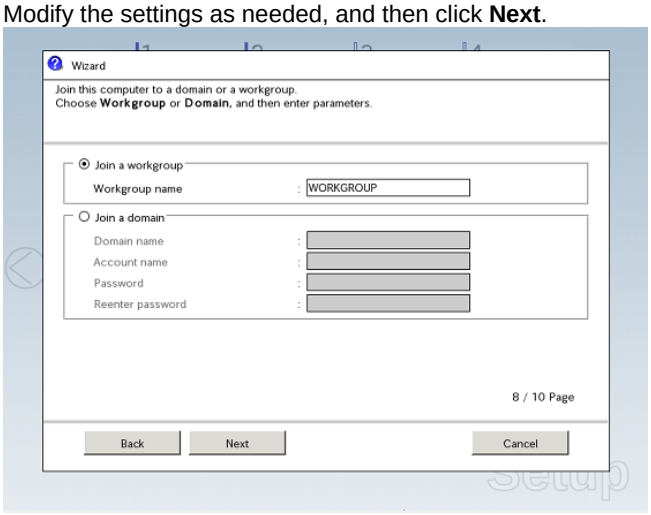
The order of entry in **Custom settings** may differ from the numbering of LAN connectors.

Note

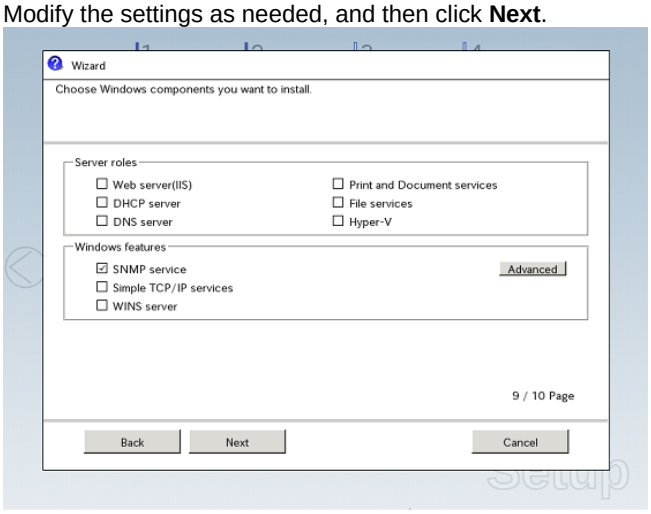
Even when an optional network board is connected, **Custom settings** only shows standard network boards.

After finishing Setup with EXPRESSBUILDER, specify the optional network settings again.

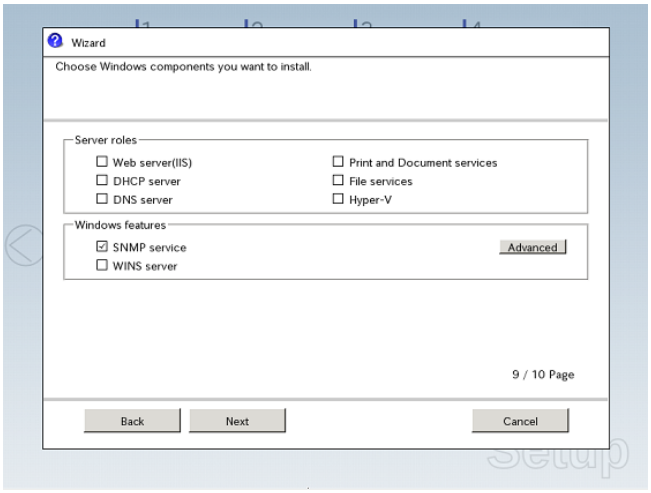
(7) Specify the settings for the domain or workgroup.
Modify the settings as needed, and then click **Next**.



(8) Specify the settings for Windows components.
Modify the settings as needed, and then click **Next**.

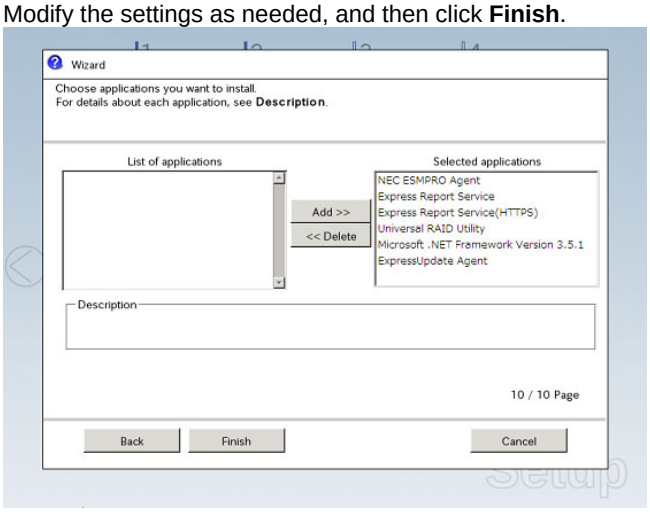


Server with a GUI

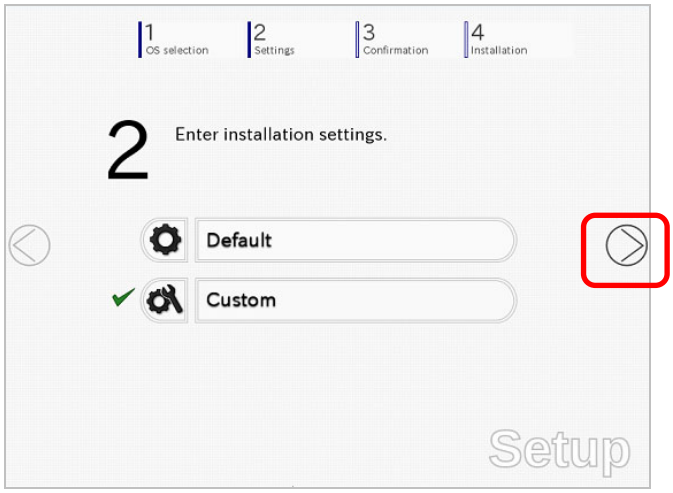


Server Core Installation

(9) Specify the settings for applications.
Modify the settings as needed, and then click **Finish**.

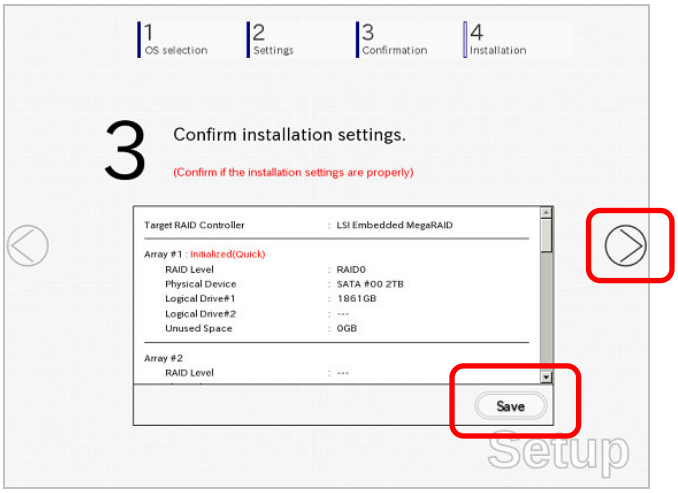


On the following screen, click ▷ on the right side of the screen.



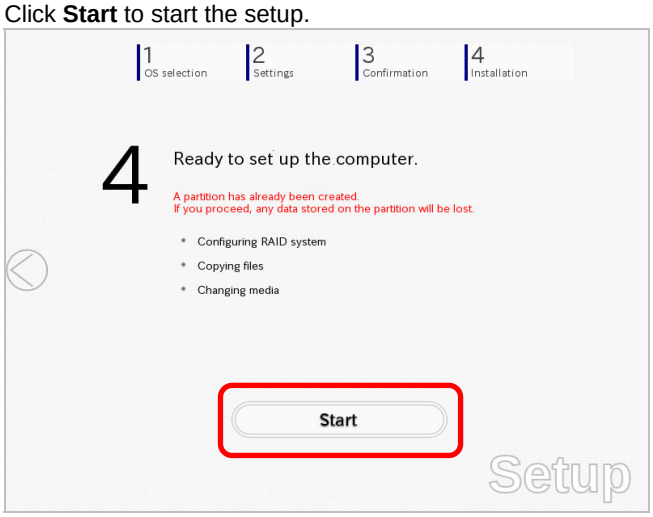
10. Confirm installation settings

If you want to save the settings, click **Save**.

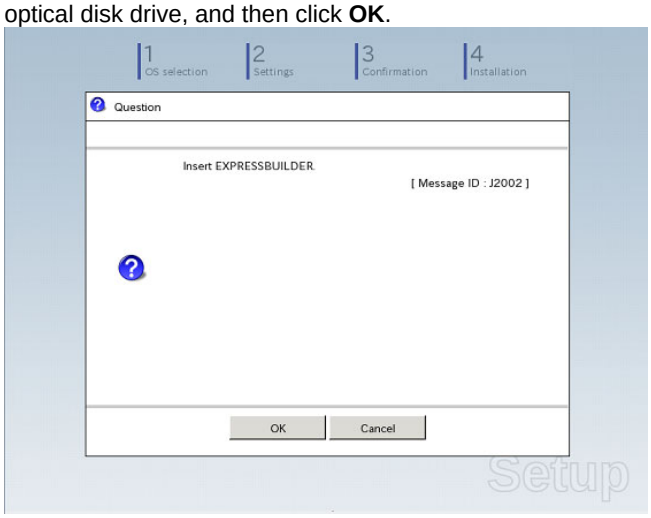


Click ▷ on the right side of the screen.

11. Click **Start** to start the setup.



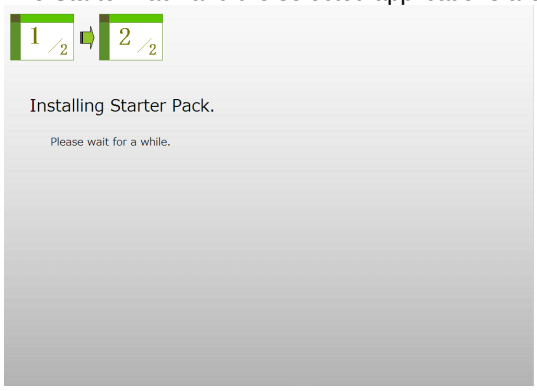
12. When the server has started from the EXPRESSBUILDER disc, insert the EXPRESSBUILDER disc into the optical disk drive, and then click **OK**.



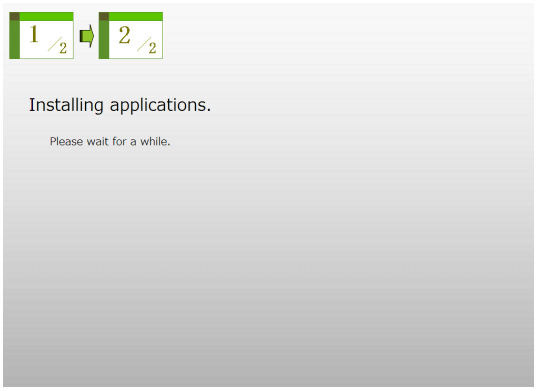
13. Insert the OS installation disc into the optical disk drive, and then click **OK**.

Windows Server 2012 is installed automatically.

14. The Starter Pack and the selected applications are automatically installed.

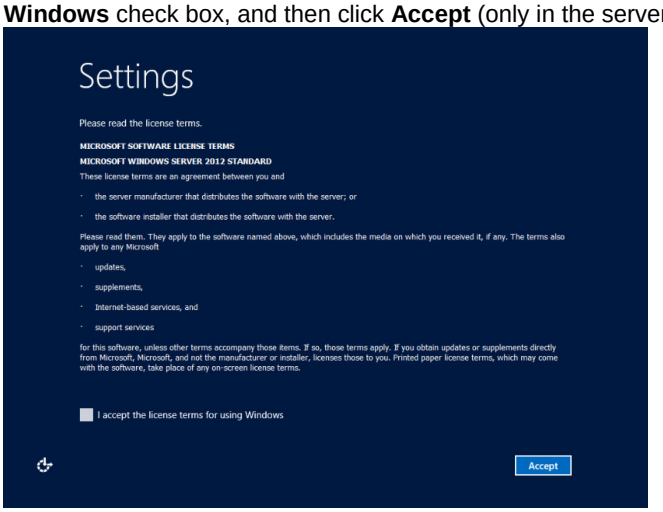


Screen displayed when Starter Pack is being installed

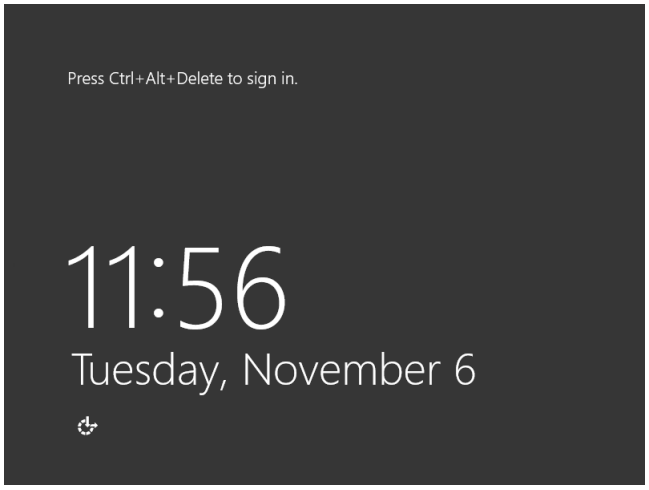


Screen displayed when an application is being installed

15. Read the terms of License Agreement. If you agree, select the **I accept the license terms for using Windows** check box, and then click **Accept** (only in the server with a GUI).

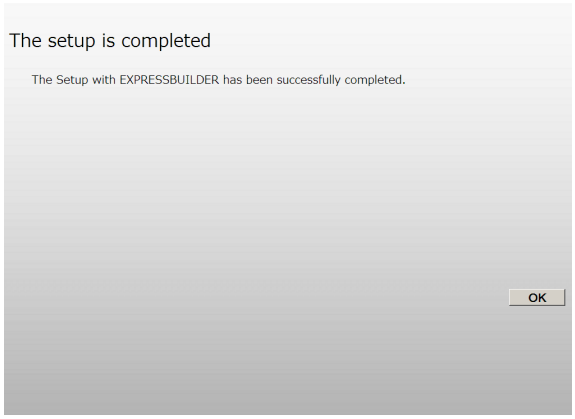

Settings
Please read the license terms.
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT WINDOWS SERVER 2012 STANDARD
These license terms are an agreement between you and
the server manufacturer that distributes the software with the server; or
the software installer that distributes the software with the server.
Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft
updates,
supplements,
Internet-based services, and
support services
for this software, unless other terms accompany those items. If so, those terms apply. If you obtain updates or supplements directly from Microsoft, Microsoft, and not the manufacturer or installer, licenses those to you. Printed paper license terms, which may come with the software, take place of any on-screen license terms.
I accept the license terms for using Windows
Accept

16. Press the <Ctrl> + <Alt> + <Delete> keys to sign in.



On the following screen, type the password you have set at step 9.

17. Click **OK**.



18. Follow the instructions described in *Chapter 1 (3.5 Setting Up Device Drivers)* to set up the device drivers.
19. Install the optional device drivers according to the instructions of the manuals for the optional devices.
20. Perform the setup by following the instructions described in *Chapter 1 (6. Setup for Solving Problems)*.

Setup with EXPRESSBUILDER is now complete.

3.3 Setup with Windows Standard Installer

This section describes how to install Windows with Windows Standard Installer.

This feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following "*User's Guide* ".

Important

Setup with Windows standard Installer may delete all data of the hard disk drive depending on the settings. Pay attention to input parameters. You must be especially careful when configuring the following:

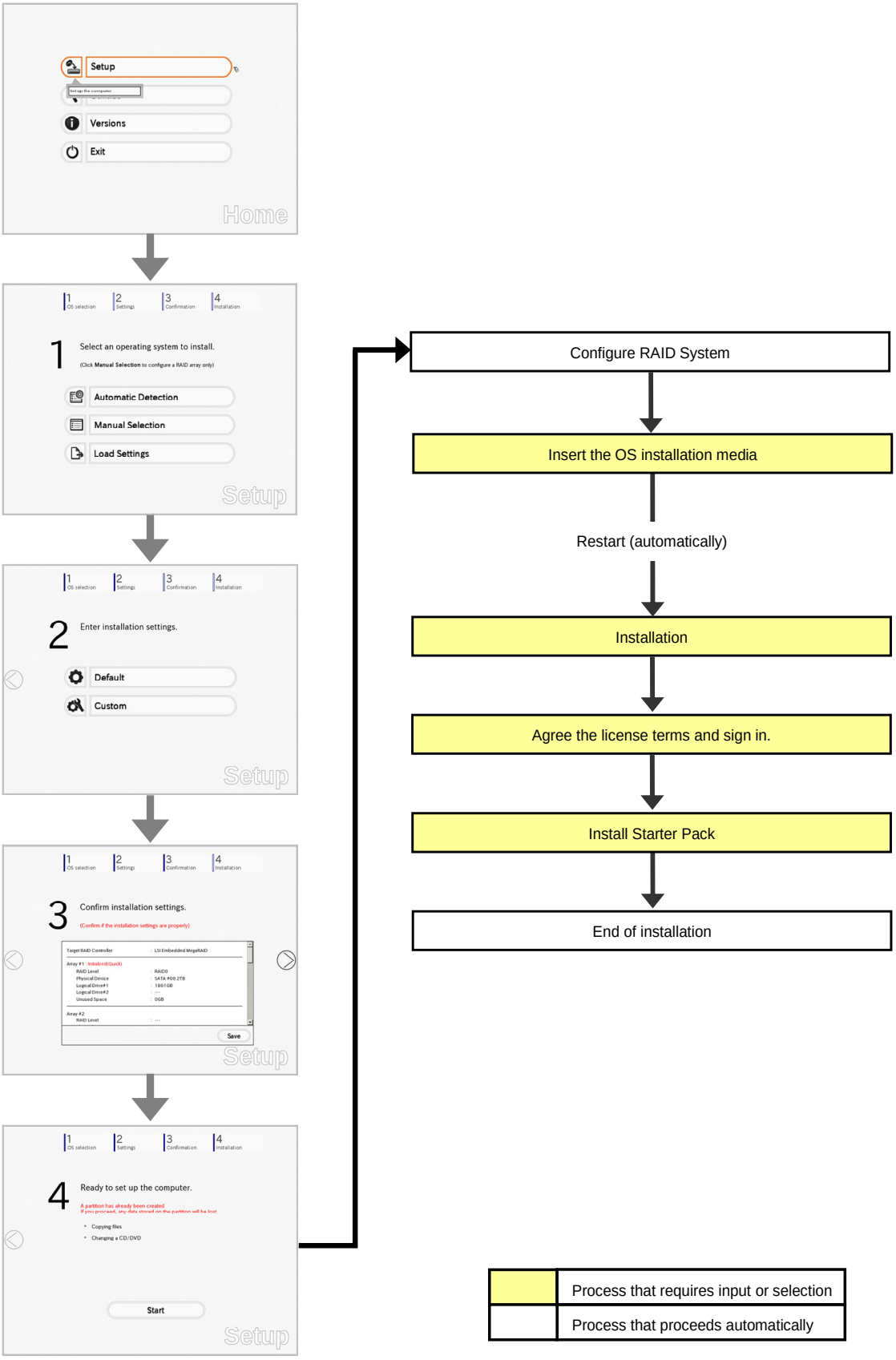
– RAID settings

Backing up user data, as needed, is recommended.

Tips

- Setup with Windows Standard Installer allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, see *7. Windows OS Parameter File*.

3.3.1 Setup flow



3.3.2 Requirements for Setup

Prepare the following disc and media and instruction manuals before starting setup.

- Either of the following OS installation disc
  - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
  - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2012 DVD-ROM*)

- Either of the following EXPRESSBUILDER
  - **EXPRESSBUILDER DVD**
  - **Internal Flash Memory** (optional)

- Prepare if needed:
  - **Removable media for Windows OS parameter file**

Tips

- EXPRESSBUILDER can be run from Internal Flash Memory without the DVD when it is installed in the server.

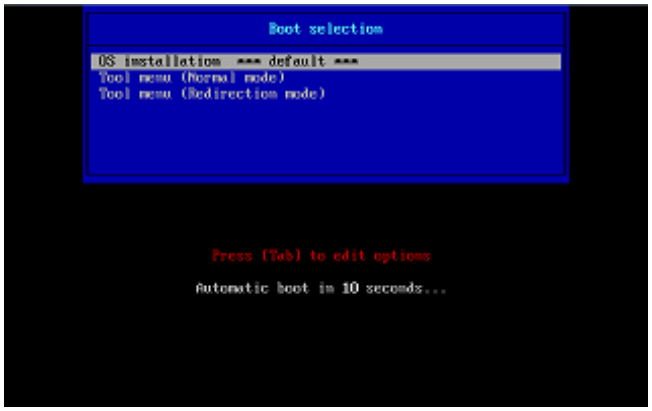
3.3.3 Setup procedure

Note Read through the items in *Chapter 1* (*3.1 Precautions for Windows Server 2012 Installation*) prior to installing Windows.

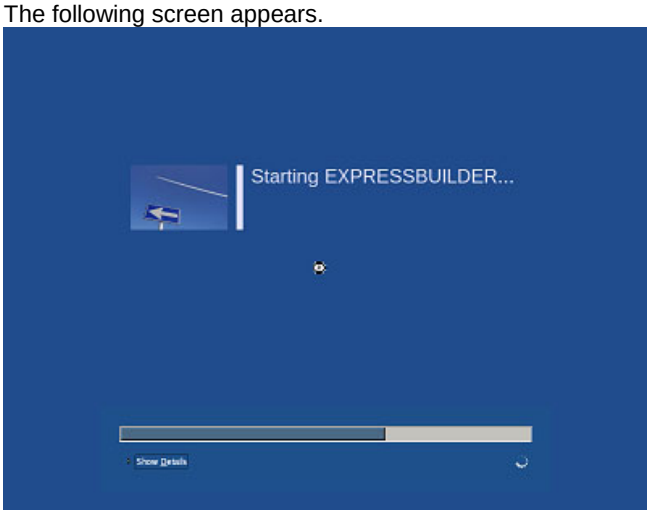
1. Turn peripheral device, such as a display, power on, and then turn the server power on.

2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.

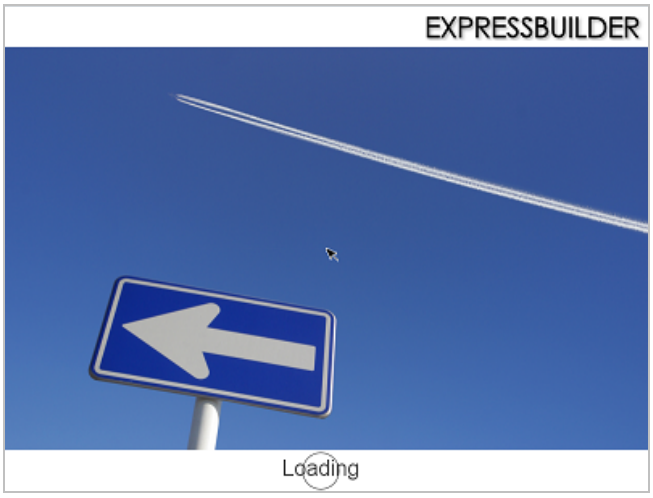
3. Choose **OS installation** from Boot selection.


Boot selection
OS installation *** default ***
Tool menu (Normal mode)
Tool menu (Redirection mode)
Press [Tab] to edit options
Automatic boot in 10 seconds...

The following screen appears.

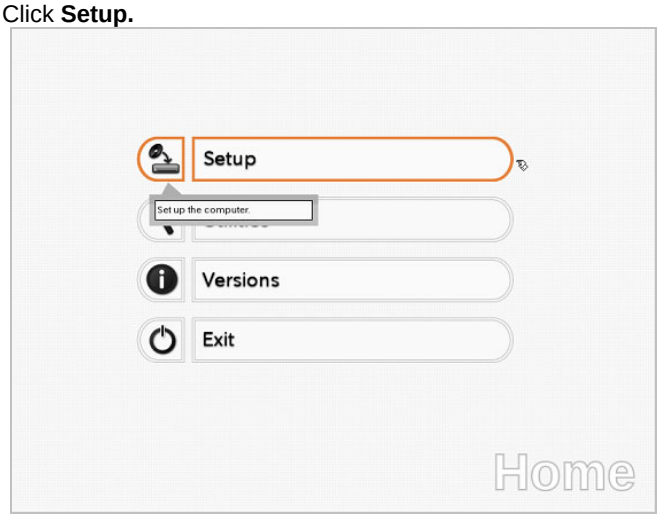


The server starts from EXPRESSBUILDER.



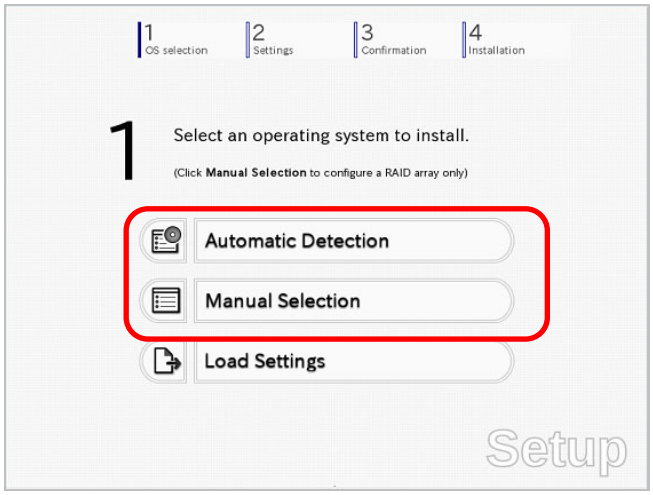
4. Choose **English** on the language selection window, and then click [OK].

5. Click **Setup.**



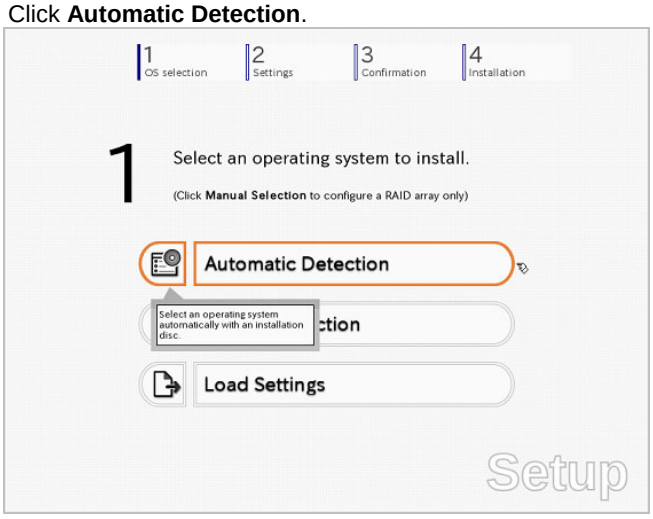
6. On the **OS selection** menu, choose the OS to install or specify the parameter file.
   - ☐ Not using parameter file : Go to Step 7.
   - ☐ Using a parameter file : Go to Step 8.

7. When *not using* a parameter file, choose an OS by either of the following two ways:



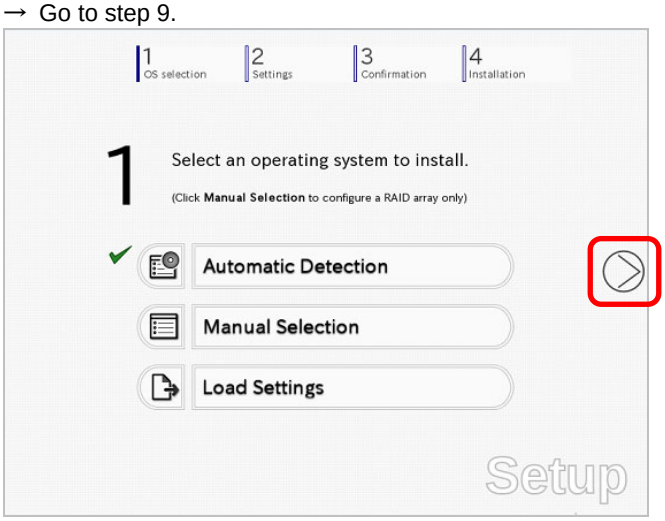
To automatically detect the OS on the OS installation disc:

(1) Click **Automatic Detection**.



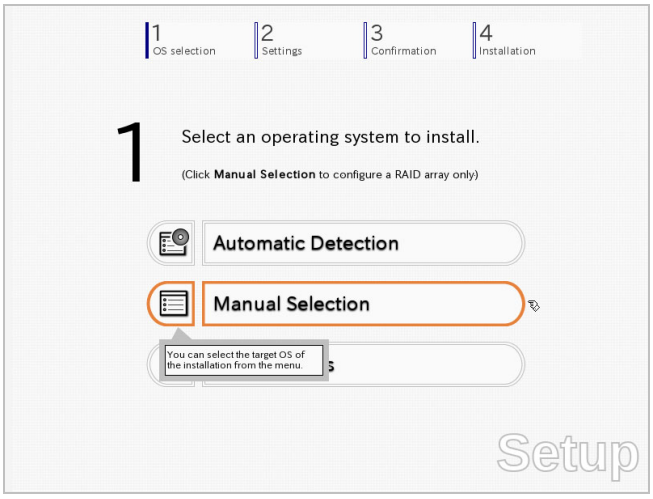
Insert the OS installation disc, and then click **OK**.

(2) Click ▷ on the right side of the screen.
→ Go to step 9.



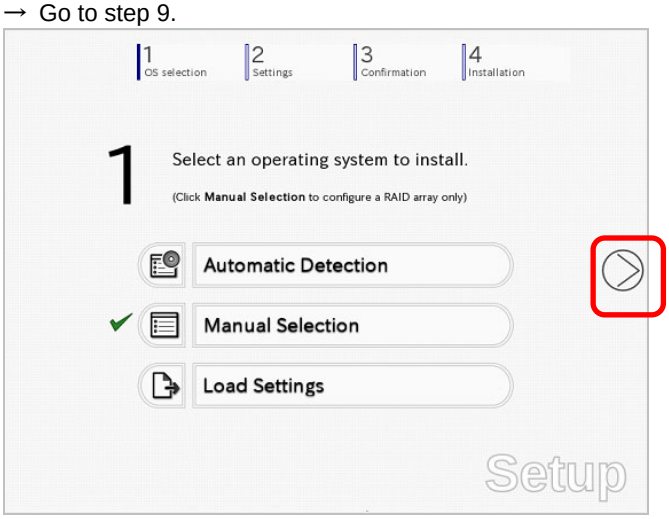
To select an OS from the menu:

(1) Click **Manual Selection**.

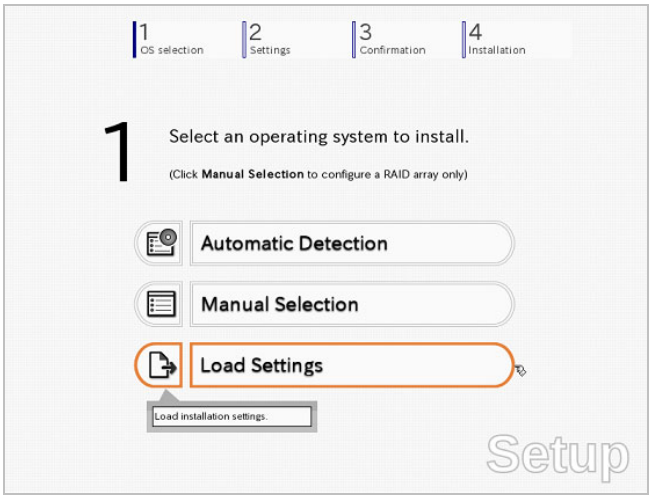


(2) From the **Windows** list, choose **Windows Server 2012**, and then click **OK**.

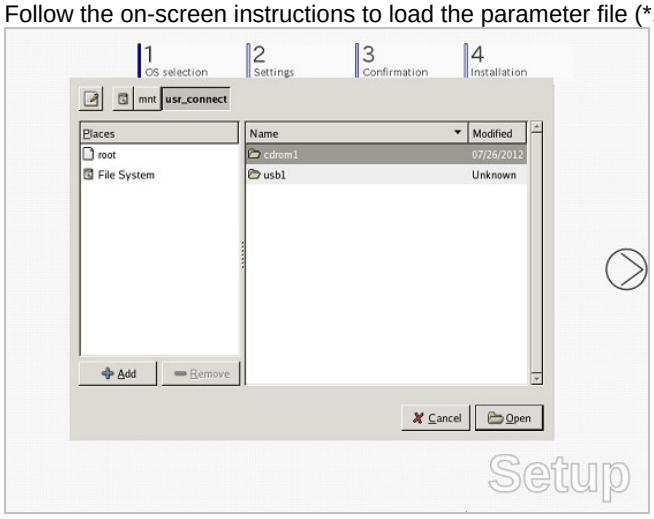
(3) Click ▷ on the right side of the screen.
→ Go to step 9.



8. When *using* the parameter file, click **Load Settings.**



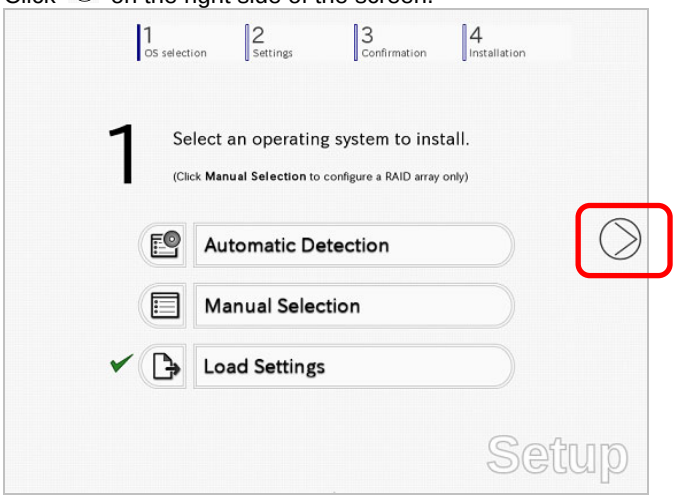
Follow the on-screen instructions to load the parameter file (*.tre).



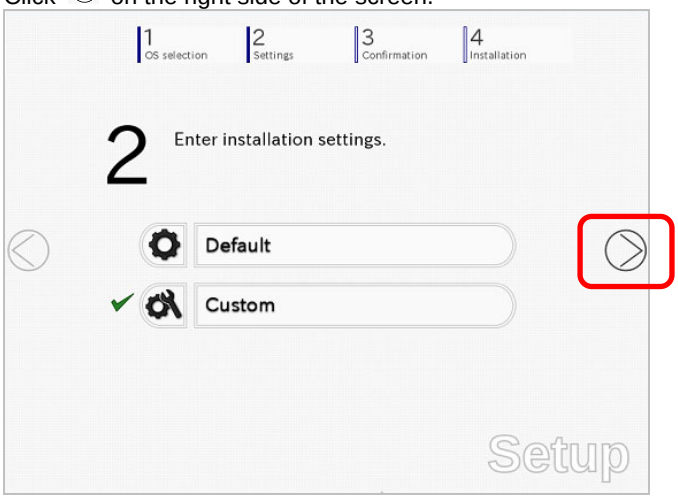
Tips

For the removable media in which the parameter file is saved, see "**/mnt/usr_connect/usb***" (* indicates a number).

Click ▷ on the right side of the screen.

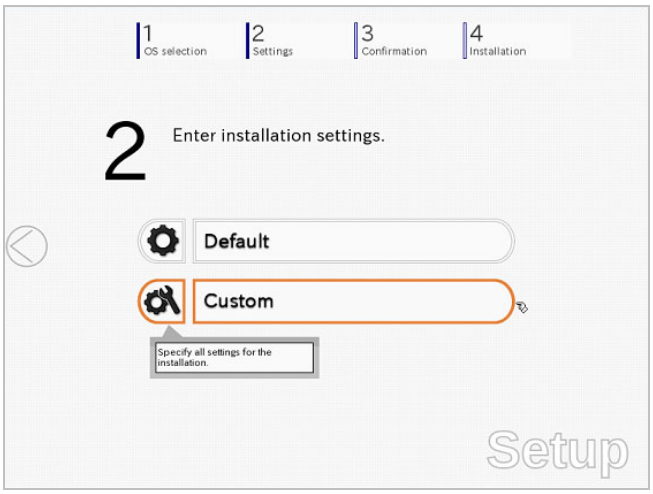


When the parameter file is correctly loaded, the settings are determined.
Click **Custom** to check and modify the settings in the wizard.
Click ▷ on the right side of the screen.

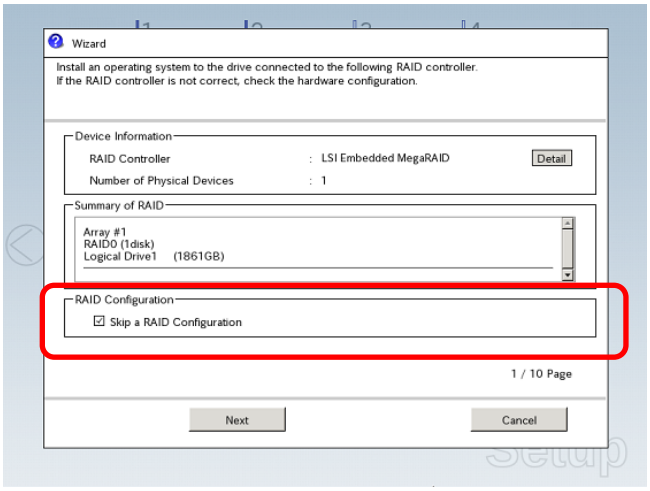


→ Go to step 10.

9. Click **Custom**.



(1) Use the wizard to configure the RAID system with the RAID controller detected automatically.



Creating new logical drives:

Clear the **Skip a RAID Configuration** check box and click **Next**. Follow the wizard to set up the RAID array and logical drives.

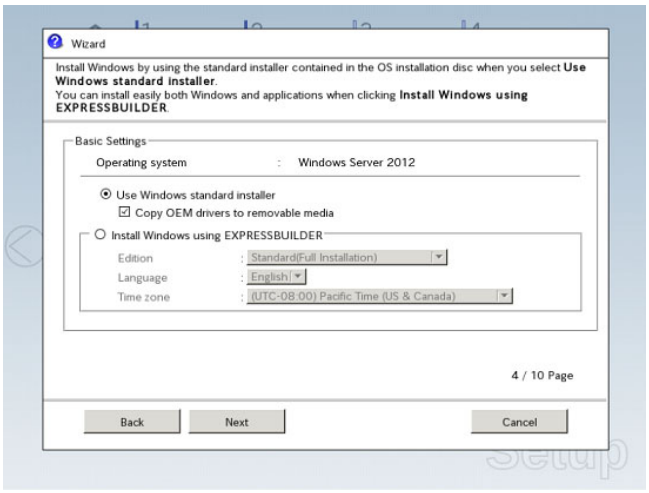
Important **The existing RAID system is cleared and all data on the hard disk drives will be lost when proceeding to the installation.**

Skipping the creation of new logical drives:

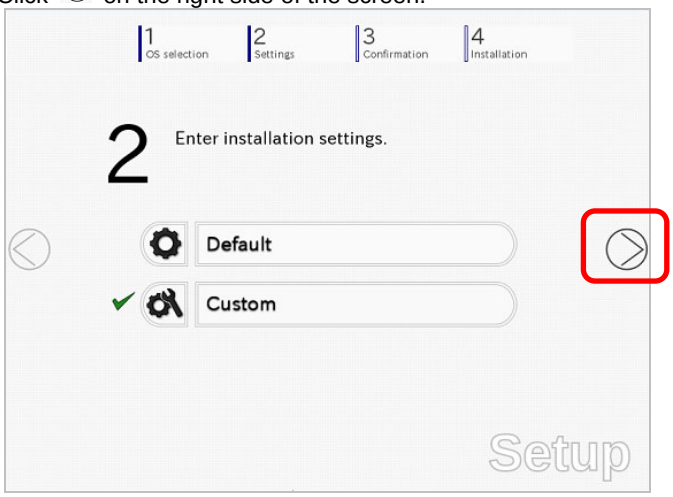
Select the **Skip a RAID Configuration** check box, and then click **Next**.

(2) Specify the settings for **Basic Settings**.

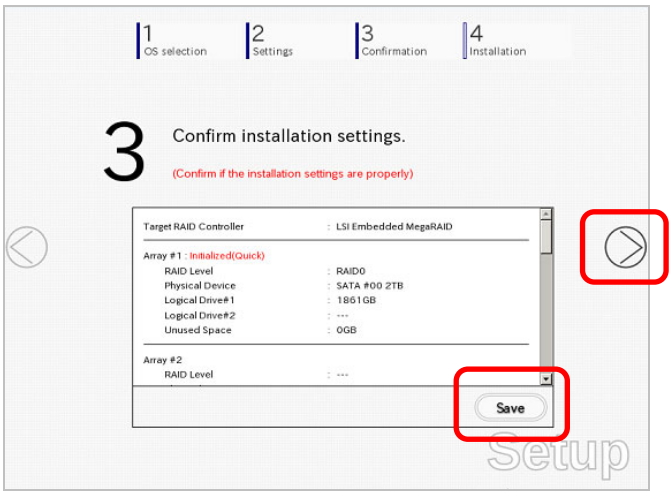
Choose **Use Windows standard installer**, modify the settings as needed, and then click **Next**.


Wizard
Install Windows by using the standard installer contained in the OS installation disc when you select Use Windows standard installer.
You can install easily both Windows and applications when clicking Install Windows using EXPRESSBUILDER.
Basic Settings
Operating system : Windows Server 2012
Use Windows standard installer
Copy OEM drivers to removable media
Install Windows using EXPRESSBUILDER
Edition : Standard(Full Installation)
Language : English
Time zone : (UTC-08:00) Pacific Time (US & Canada)
4 / 10 Page
Back
Next
Cancel

(3) Click ▷ on the right side of the screen.

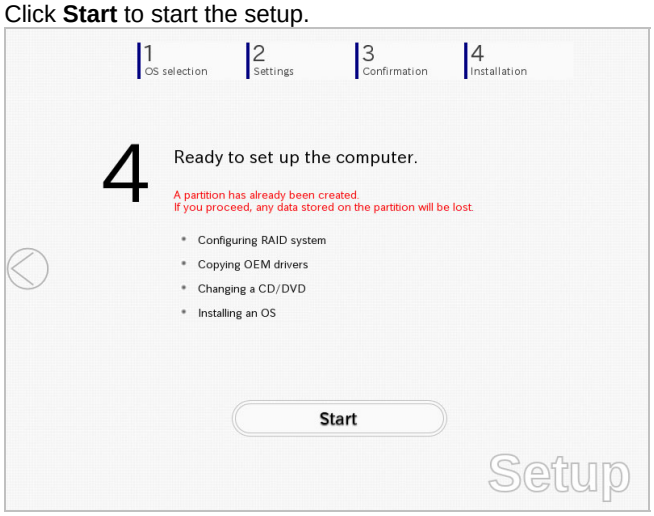


10. Confirm installation settings.
If you want to save the settings, click **Save**.

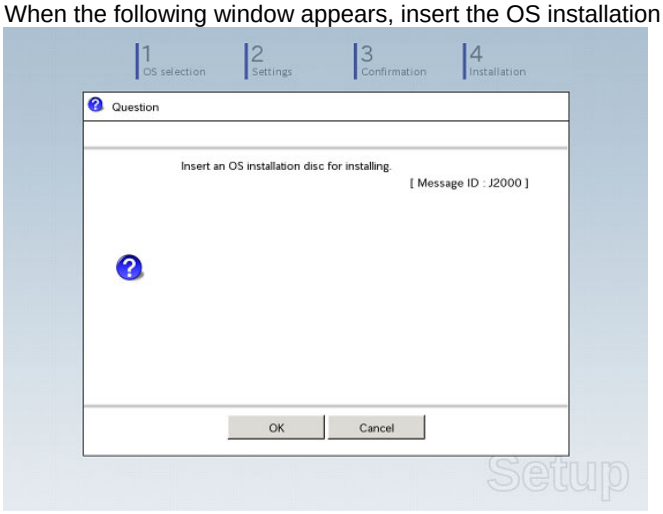


Click ▷ on the right side of the screen.

11. Click **Start** to start the setup.



12. When the following window appears, insert the OS installation disc into the disk drive, and then click **OK**.



13. The server restarts automatically.
    If you want to use Internal Flash Memory, press <F3> key when the following message appears during POST.

```
Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network
```

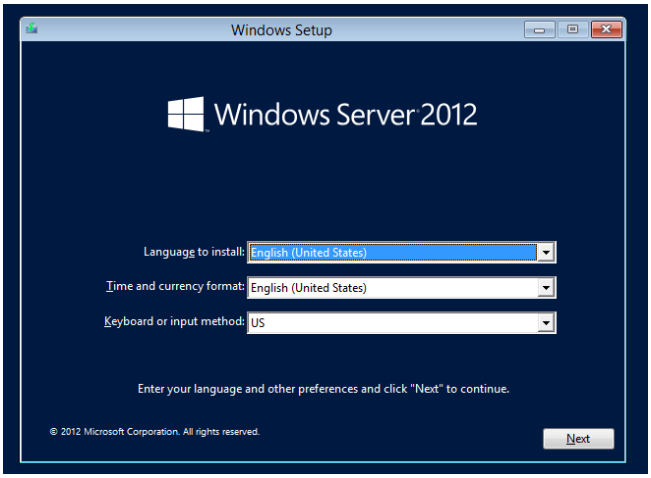
Note Since the OS installation disc is set in the optical disk drive in Step 12, boot the system from the optical disk drive having higher boot priority, not from Internal Flash Memory.

14. Start from the OS installation disc.
    If an operating system is already installed on the hard disk drive, press <Enter> key while the message "Press any key to boot from CD or DVD…" is displayed on the top of the screen.

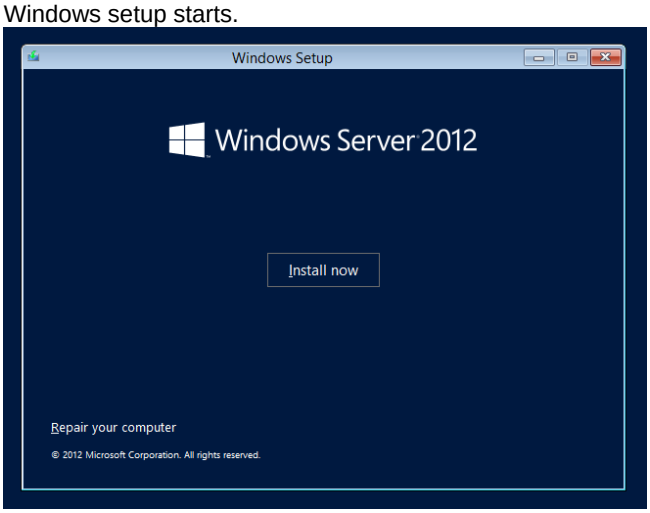
    The boot sequence proceeds and the message "Windows is loading files…" appears.

Note If "Windows is loading files..." message does not appear, <Enter> key was not pressed correctly. Reboot and retry.

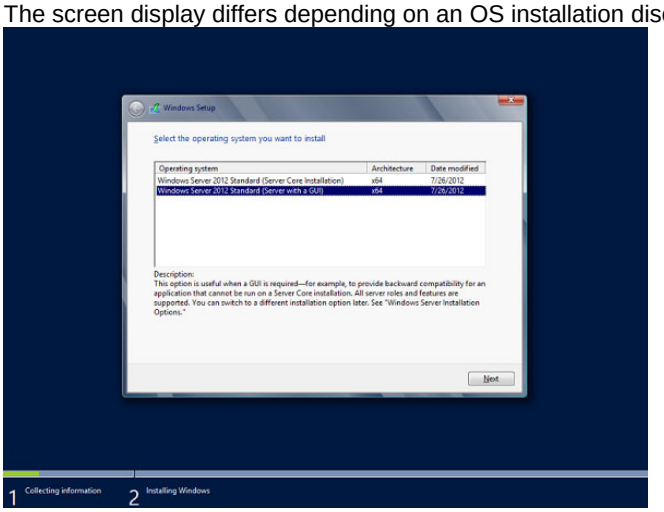
15. Click **Next**.


Windows Setup
Windows Server 2012
Language to install: English (United States)
Time and currency format: English (United States)
Keyboard or input method: US
Enter your language and other preferences and click "Next" to continue.
© 2012 Microsoft Corporation. All rights reserved.
Next

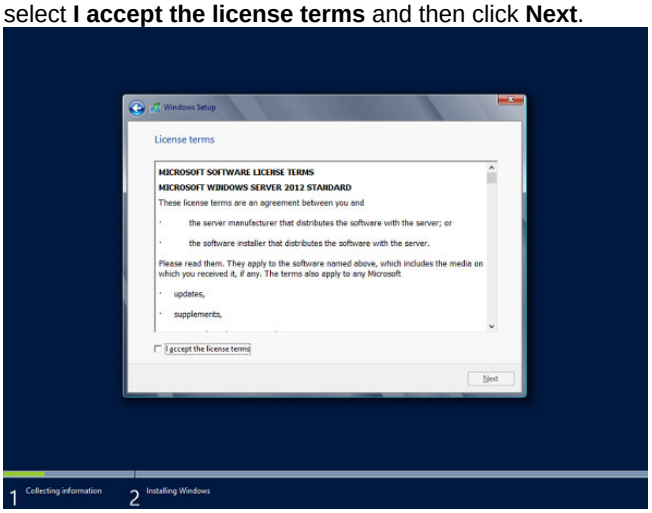
16. Click **Install now**.
    Windows setup starts.



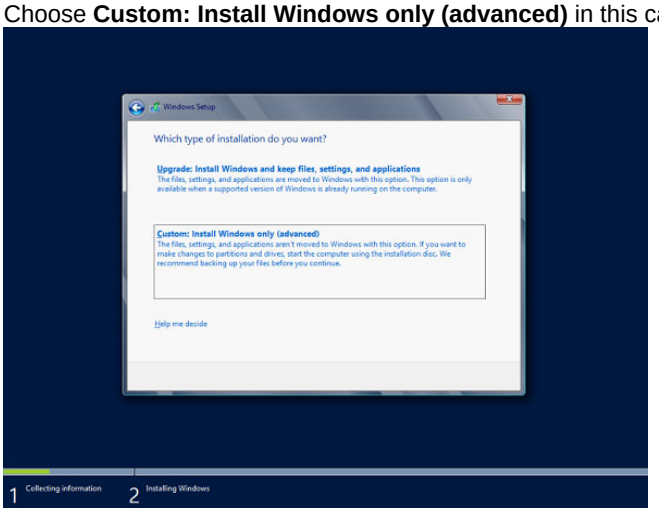
17. Choose the operating system to install, and then click **Next**.
    The screen display differs depending on an OS installation disc.



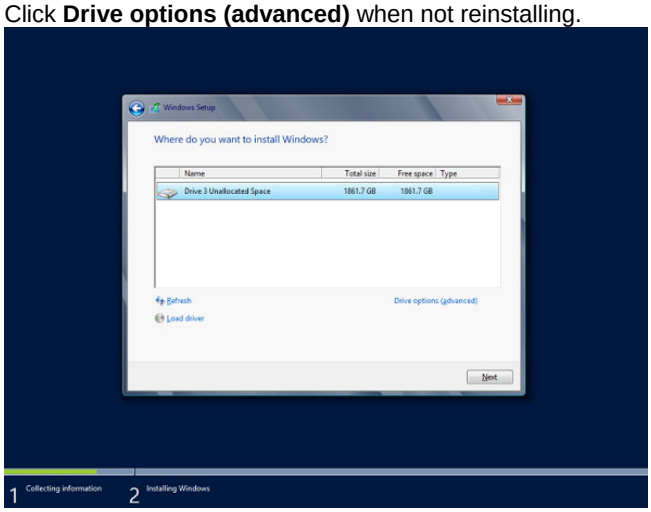
18. When the following window appears, confirm the content of the license agreement. If you agree, select **I accept the license terms** and then click **Next**.


Windows Setup
License terms
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT WINDOWS SERVER 2012 STANDARD
These license terms are an agreement between you and
the server manufacturer that distributes the software with the server; or
the software installer that distributes the software with the server.
Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft
updates,
supplements,
I accept the license terms
Next
1 Collecting information
2 Installing Windows

19. When the following message appears, select the installation type.
Choose **Custom: Install Windows only (advanced)** in this case.

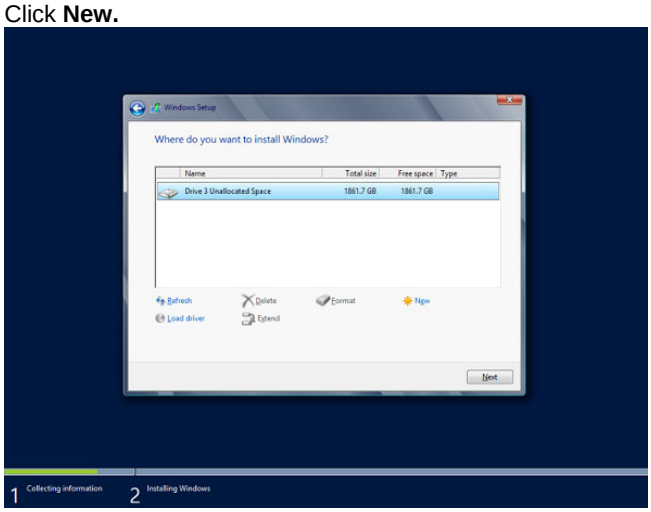

Windows Setup
Which type of installation do you want?
Upgrade: Install Windows and keep files, settings, and applications
The files, settings, and applications are moved to Windows with this option. This option is only available when a supported version of Windows is already running on the computer.
Custom: Install Windows only (advanced)
The files, settings, and applications aren't moved to Windows with this option. If you want to make changes to partitions and drives, start the computer using the installation disc. We recommend backing up your files before you continue.
Help me decide
1 Collecting information
2 Installing Windows

20. Click **Drive options (advanced)** when not reinstalling.

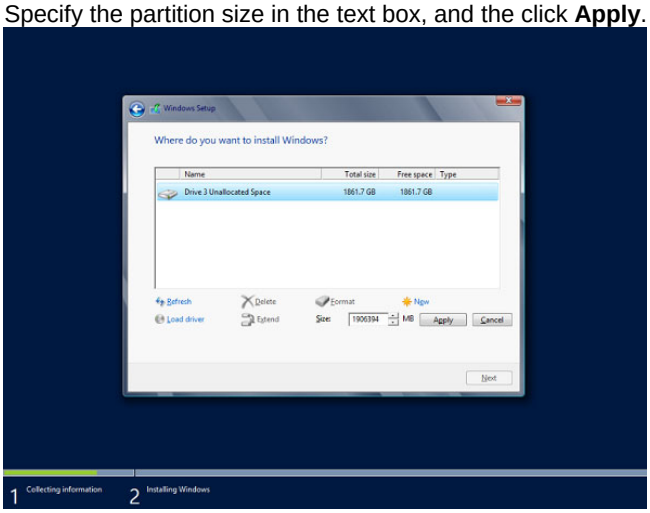


If the hard disk drive already contains an OS, go to the next step.
If a partition has already been created, go to step 24.

21. Click **New.**

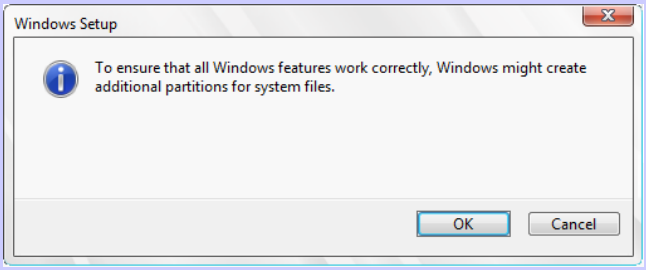


22. Specify the partition size in the text box, and the click **Apply**.



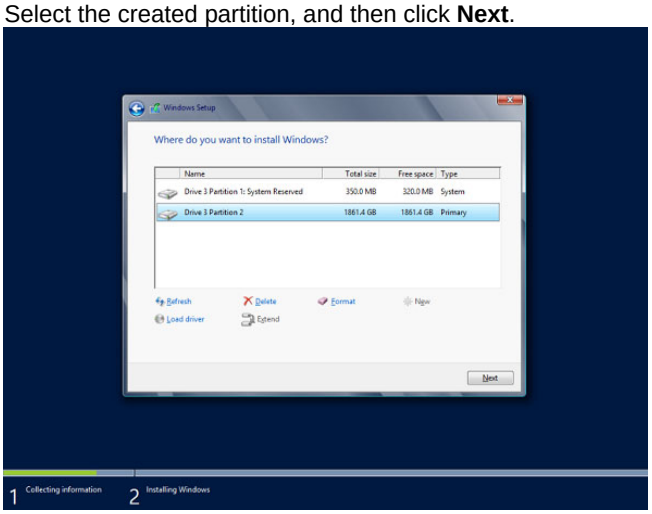
Tips

When creating a new partition and installing the OS, a 350 MB boot partition is created. When the following window appears, click **OK**.


Windows Setup
To ensure that all Windows features work correctly, Windows might create additional partitions for system files.
OK
Cancel

23. Select the partition created in step 21, and then click **Format**.

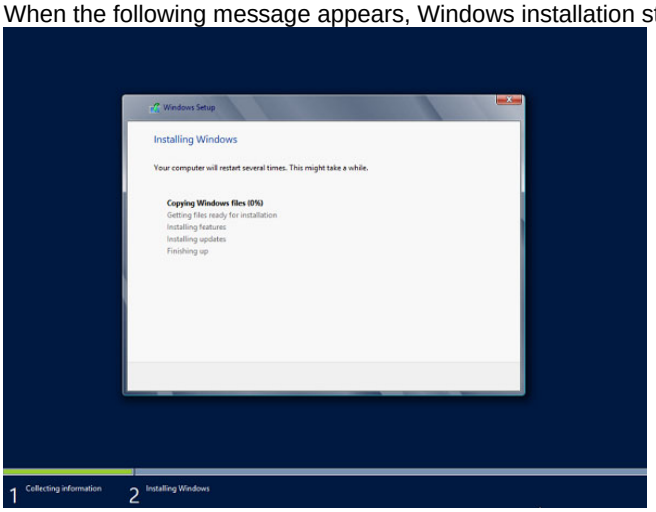
24. Select the created partition, and then click **Next**.



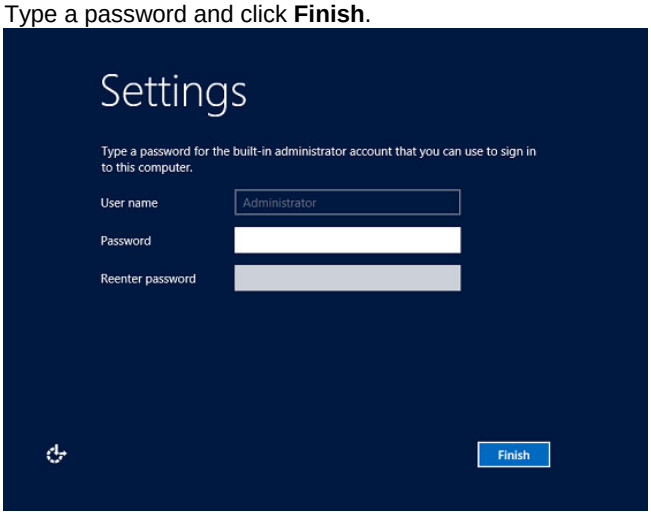
Tips

The number of partitions displayed differs depending on the hardware configuration.

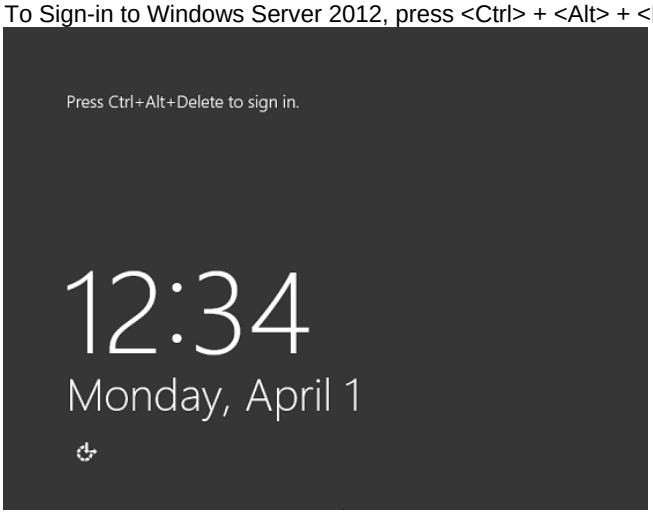
When the following message appears, Windows installation starts automatically.



25. Type a password and click **Finish**.



26. To Sign-in to Windows Server 2012, press <Ctrl> + <Alt> + <Del> on the screen below.

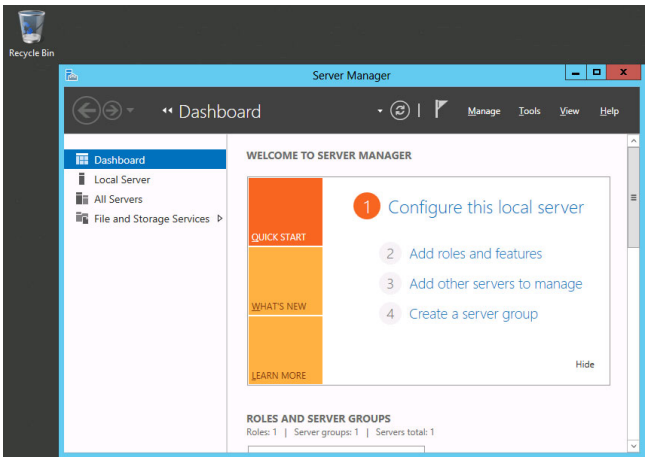


27. Type the password and press **Enter**.

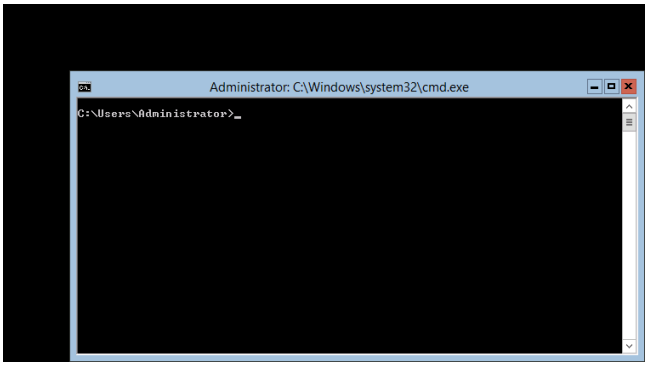
Windows Server 2012 starts.

28. The following screen appears according to the contents selected (or displayed) in Step 17.

Server with a GUI



Server Core Installation



Tips

See Microsoft Website for more details.
Configure and Manage Server Core Installations
http://technet.microsoft.com/us-en/library/jj574091.aspx

29. Install Starter Pack by referring to *Chapter 1* (*3.4 Installing Starter Pack)*.

30. Install drivers and specify detailed settings by referring to *Chapter 1 (3.5 Setting Up Device Drivers)*.

31. Install the optional device drivers according to the instructions of the manuals for the optional devices.

32. Install the applications as needed by referring to *Chapter 1* (*3.7 Installing the Applications*).

33. Perform the setup by following the instructions described in *Chapter 1 (6. Setup for Solving Problems).*

Setup with Windows standard installer is now complete.

3.4 Installing Starter Pack

Starter Pack contains drivers customized for this server. Be sure to apply Starter Pack before running the system.

Important

Also install Starter Pack in the following cases.

- **The system configurations have changed**
  (If an internal optional device is installed or removed, apply the Starter Pack. If a dialog box prompting system reboot is displayed, reboot the system according to the on-screen instructions, and then apply the Starter Pack.)
- **If the system was restored using a restore process**
- **If a system has been restored using the backup tool**

Note

The Scalable Networking Pack (SNP) function is disabled upon Starter Pack installation is complete.
The setting of SNP function may affect the system performance.

Tips

If the OS is installed by using EXPRESSBUILDER, Starter Pack is already applied. If the configuration is not changed, you do not need to apply Starter Pack again.

3.4.1 Installing Starter Pack Using EXPRESSBUILDER DVD

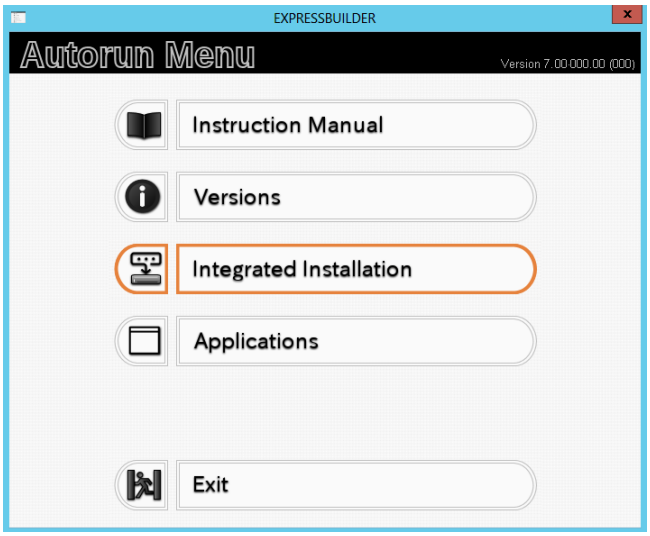
1. Sign-in to the system with the built-in administrator, which has administrative privileges.

2. Insert EXPRESSBUILDER DVD into the optical disk drive.

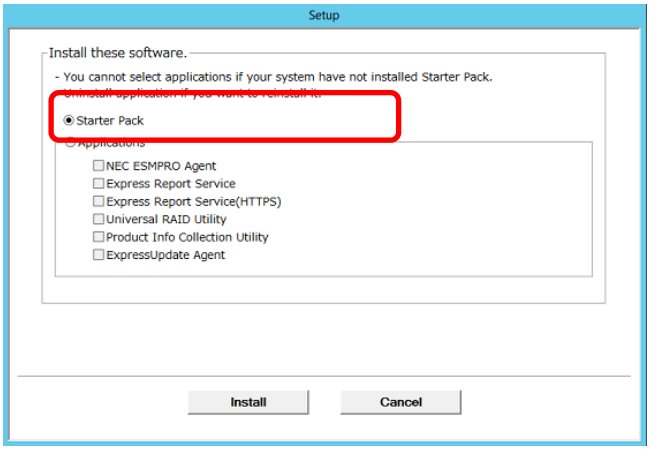
3. Start the installer of Starter Pack according to the installation type.

   Server with a GUI

   Click **Integrated Installation** on the menu.



When the following screen appears, make sure that the **Starter Pack** option is selected, and then click **Install**.



Server Core installations

(1) Type the following command from the command prompt.
In the example below, the optical disk drive is D drive.

```
Cd /d D:\002\win\winnt\bin
```

```
C:\Users\administrator>cd /d D:\002\win\winnt\bin
```

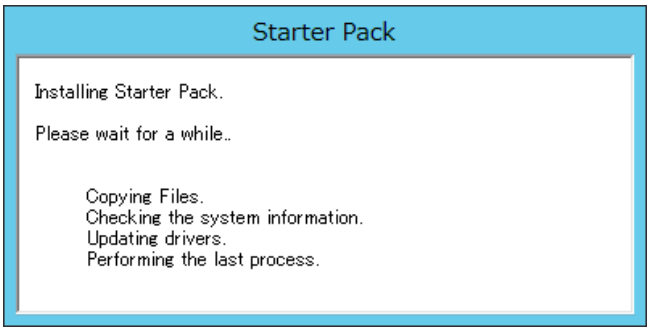
(2) Type the following, and then press <Enter> key.

```
Pkgsetup.vbs
```

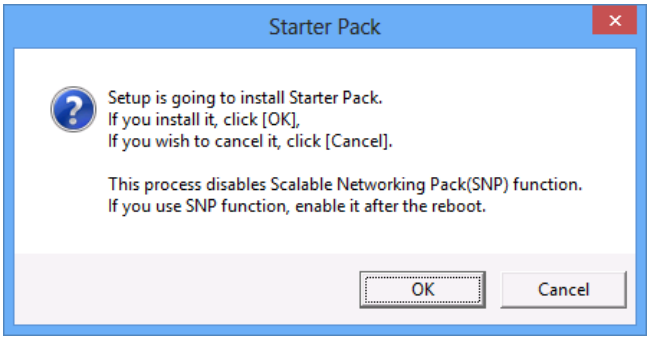
```
D:\002\win\winnt\bin>pkgsetup.vbs
```

Wait for several minutes without attempting any further operation until the following window appears.

On the server with GUI, the following progress message appears while the Starter Pack is installed.



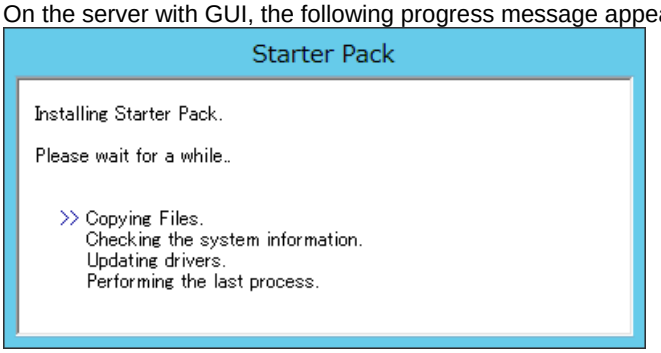
4. Read the message, and then click **OK**.
   Starter Pack installation starts.


Starter Pack
Setup is going to install Starter Pack.
If you install it, click [OK],
If you wish to cancel it, click [Cancel].
This process disables Scalable Networking Pack(SNP) function.
If you use SNP function, enable it after the reboot.
OK
Cancel

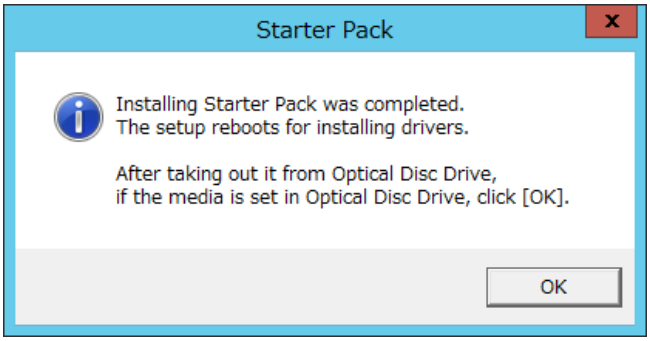
Wait until installation completes (about 3 to 5 minutes).

Note The screen will black out instantaneously or resolution will change while Starter Pack is installed.

On the server with GUI, the following progress message appears while the Starter Pack is installed.



5. When the following message appears, Starter Pack installation is complete.
   Follow the instructions in the message, and remove EXPRESSBUILDER DVD.


Starter Pack
Installing Starter Pack was completed.
The setup reboots for installing drivers.
After taking out it from Optical Disc Drive,
if the media is set in Optical Disc Drive, click [OK].
OK

6. Click **OK** and then restart the system.

Installation of Starter Pack is now complete.

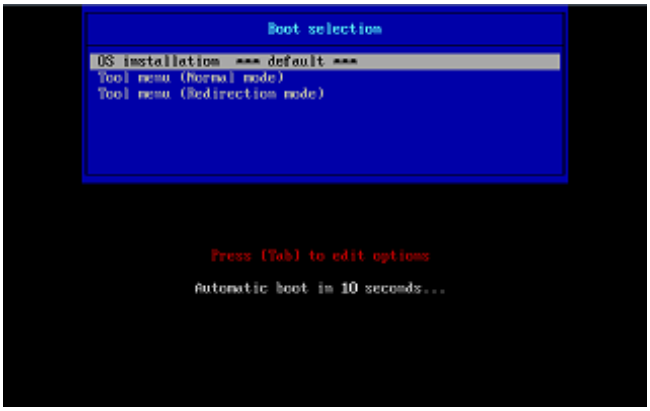
3.4.2 Installing Starter Pack Using Internal Flash Memory

If your system is installed the optional " Internal Flash Memory ", you can install Starter Pack by using Internal Flash Memory.

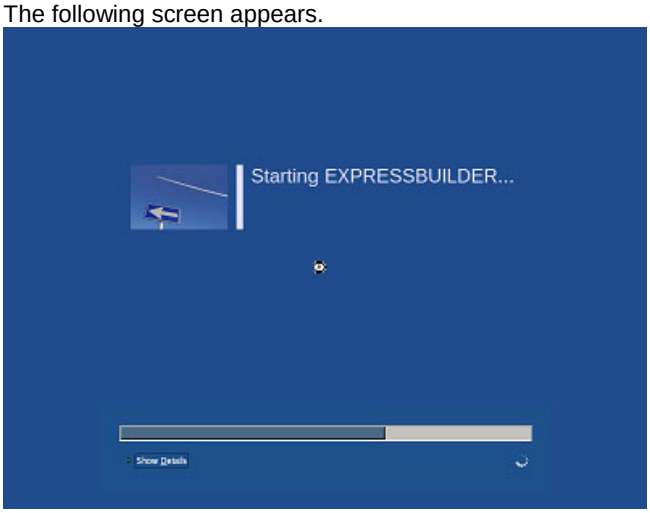
1. After installing the operating system, restart the server.

2. Remove the DVD or other media from the server and press <F3> key when the message "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears during POST.

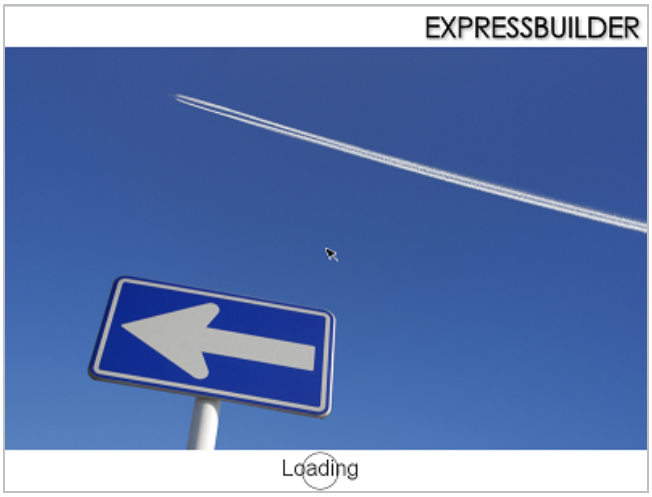
3. When the following message appears, choose **OS installation**.


Boot selection
OS installation *** default ***
Tool menu (Normal mode)
Tool menu (Redirection mode)
Press (Tab) to edit options
Automatic boot in 10 seconds...

The following screen appears.

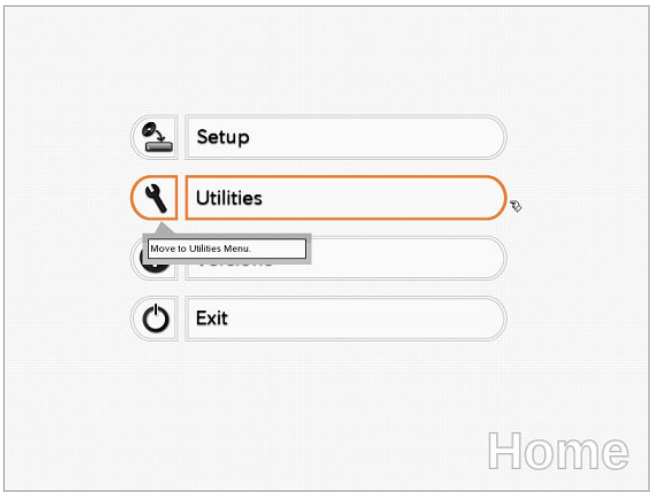


The server starts from EXPRESSBUILDER.

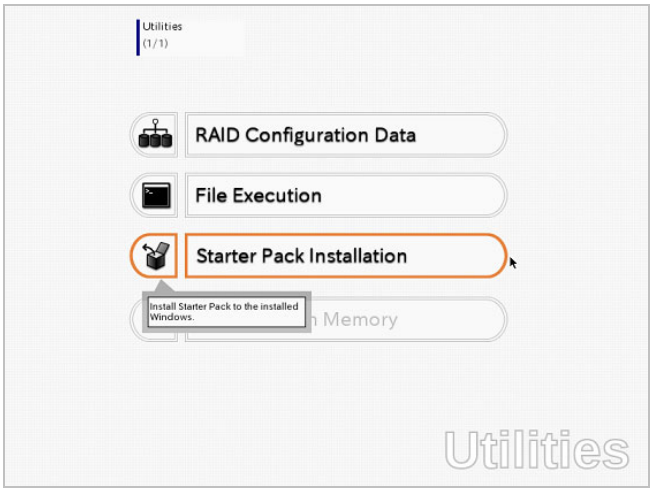


4. Select **English** on the language selection window, and then click **OK**.

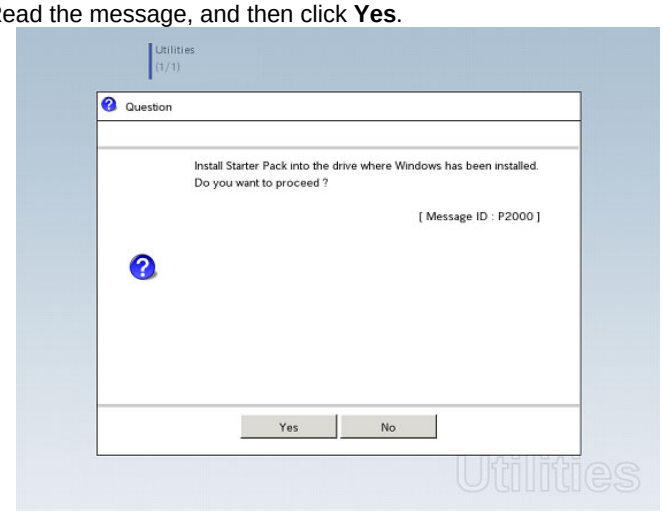
5. Click **Utilities**.



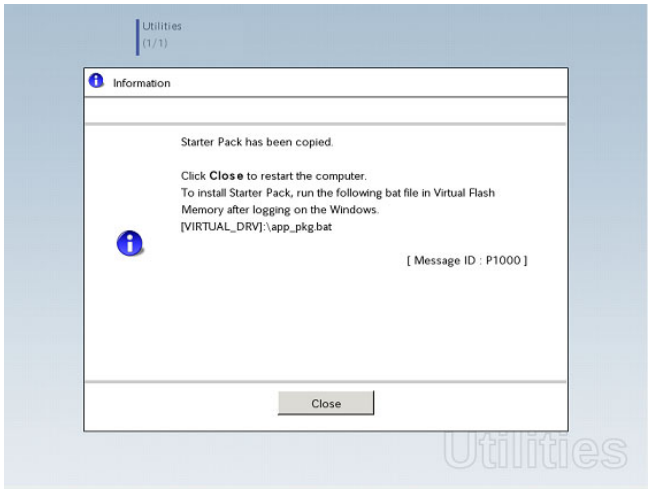
6. Click **Starter Pack Installation**.



7. Read the message, and then click **Yes**.



8. Click **Close** on the following screen.
   The server will restart. Do not press <F3> key during POST.


Utilities
(1/1)
Information
Starter Pack has been copied.
Click Close to restart the computer.
To install Starter Pack, run the following bat file in Virtual Flash Memory after logging on the Windows.
[VIRTUAL_DRV]:\app_pkg.bat
[Message ID : P1000]
Close
Utilities

9. Proceed with the following procedure according to the installation type.

Tips

During setup, a virtual floppy disk drive is temporarily connected. Follow the instructions below to reference the virtual floppy disk drive.

Server with a GUI

Click **app_pkg.bat** of the virtual floppy disk drive (usually A: drive).

Server Core installations

(1) Type the following command at the command prompt, and then specify the drive letter of the virtual foppy disk drive (usually A: drive).

```
Cd /d A:\
```

```
C:\Users\administrator>cd /d A:\
```

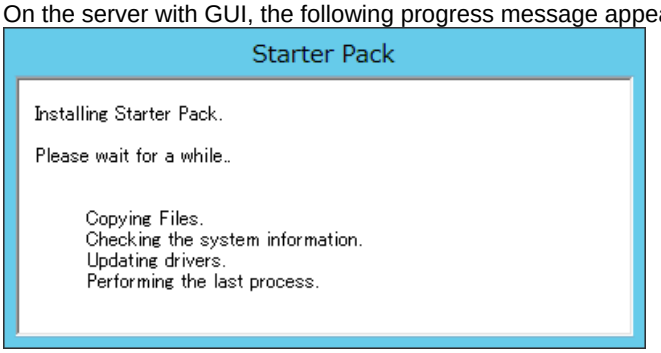
(2) Type the following, and then press <Enter> key.

```
app_pkg.bat
```

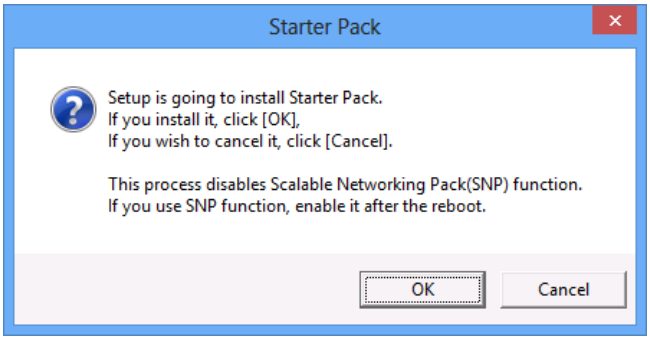
```
A:\>app_pkg.bat
```

Wait until the file copy is complete. (About 1-3minute(s))

On the server with GUI, the following progress message appears while the Starter Pack is installed.



10. Read the message, and then click **OK**.
Starter Pack installation starts.

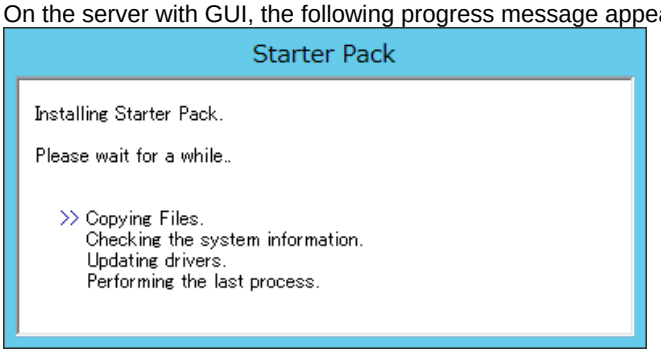

Starter Pack
Setup is going to install Starter Pack.
If you install it, click [OK],
If you wish to cancel it, click [Cancel].
This process disables Scalable Networking Pack(SNP) function.
If you use SNP function, enable it after the reboot.
OK
Cancel

Wait until the installation of the Starter Pack is complete. (About 3-5 minutes)

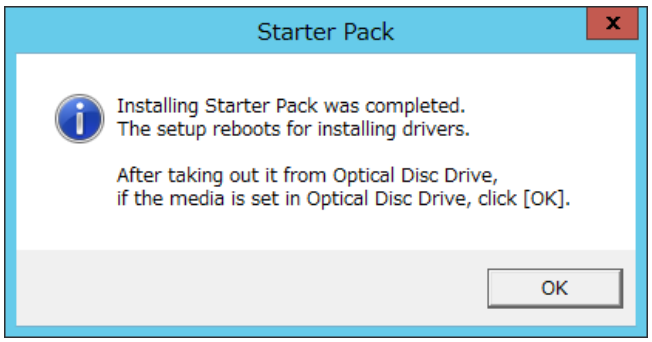
Note

The screen will black out instantaneously or resolution will change while Starter Pack is installed.

On the server with GUI, the following progress message appears while the Starter Pack is installed.



11. Click **OK** to restart the system.


Starter Pack
Installing Starter Pack was completed.
The setup reboots for installing drivers.
After taking out it from Optical Disc Drive,
if the media is set in Optical Disc Drive, click [OK].
OK

Installation of Starter Pack is now complete.

3.5 Setting Up Device Drivers

Install and set up device drivers provided for the standard configuration.

For details about the installation and setup of a driver for an optional device, refer to the manual supplied with the optional device.

3.5.1 Installing the LAN drivers

(1) LAN drivers

Starter Pack includes the drivers for the standard LAN adapter. You can install the drivers by applying Starter Pack using EXPRESSBUILDER.

Important

- **Teaming of network adapters by using BACS or PROSet is not supported.**
- **Wake On LAN in the shutdown state is not supported in the following case: Select [Control Panel] - [System and Security] - [Power Options] - [Choose what the power button does], and if [Turn on fast startup] is selected in [Shutdown settings] on [System Settings] screen.**
  When [Turn on fast startup] is not displayed, fast startup feature is disabled.

Note

- To change the LAN or BACS driver settings, log on to the system from a local console using an administrator's account. Remotely changing the settings by using the operating system's remote desktop feature is not supported.
- Be sure to select the **Internet Protocol (TCP/IP)** check box when specifying an IP address.

(2) Optional LAN board

This server supports the following optional LAN boards. The optional LAN boards do not support the Wake On LAN (WOL) feature.

Optional LAN boards: N8104-128/132/133/138/145

The drivers for LAN boards are automatically installed using the OS plug-and-play feature.

The LAN driver is not installed if N8104-145 is not installed at the time of the OS installation by using EXPRESSBUILDER or Starter Pack.

Follow the steps below to install the N8104-145 LAN driver manually.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.

   If Autorun Menu appears, close the menu.

Tips

EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

2. Run **`install.bat`** in the following folder at the command prompt.

   Using EXPRESSBUILDER DVD:

   EXPRESSBUILDER DVD:\002\win\winnt\ws2012\lan\intel

   Using System Drive when Starter Pack was installed from Internal Flash Memory:

   System Drive:\StartPKG\ws2012\lan\intel

3. When the command prompt prompts again, remove the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Setup is now completed.

Note Using an optional LAN board, perform procedure "3.6.2 Setting up LAN drivers" for each optional LAN board.

(3) Network adapter name

After installing the LAN drivers, the following network adapter names will be displayed by the Device Manager.

Network adapters for the standard configuration:

Broadcom NetXtreme Gigabit Ethernet #xx*

Connecting with an optional LAN board:

[N8104-128] Broadcom BCM57711 NetXtreme II 10 GigE (NDIS VBD Client) #xx*
[N8104-132/133/138] Broadcom NetXtreme Gigabit Ethernet #xx*
[N8104-145] Intel(R) Ethernet Server Adapter I340-T2 #xx*

* When the same adapter name exists, a different identification number will be assigned to *xx*.

Tips The ID for N8104-128 might be a number of two or more digits. This is due to the LAN driver specifications and this number cannot be changed.

3.5.2 Setting up LAN drivers

(1) Setting link speed

The transfer rate and duplex mode of the network adapter must be the same as those of the switching hub. Follow the procedure below to specify the transfer rate and duplex mode.

1. Open the **Device Manager**.
2. Expand **Network Adapters**, and then double-click the name of the network adapter you want to set. The properties of the network adapter will be displayed.
3. Select the **Advanced** tab, and then set the **Speed & Duplex** values to the same as those of the switching hub.
4. Click **OK** in the Network Adapter Properties dialog box.
5. Restart the system.

The link speed setting is now complete.

(2) Using N8104-132/133/138

Using N8104-132/133/138 with the server, follow the procedure below.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.
   If Autorun Menu appears, close the menu.

Tips EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

2. Double-click **pgdyavd_disable.vbs** in the following folder.

   Using EXPRESSBUILDER DVD:

   EXPRESSBUILDER DVD:\002\win\winnt\WS2012\ bcom\WS2012\lan

   Using System Drive when Starter Pack was installed from Internal Flash Memory:

   System drive:\StartPKG\ws2012\lan\bcom\WS2012\lan

3. When the following message appears, click **OK**.

```
Configuration Completed
[Option:PopUp RLV Disabled(Action:Done)]
Reboot the system
```

Tips The message “Action:Non” indicates that the LAN driver is already set.

4. Remove EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Setup is now completed.

3.5.3 Graphics accelerator driver

Starter Pack includes the graphics accelerator driver for standard hardware configuration.

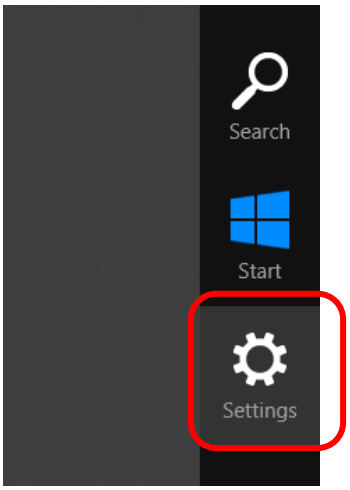
The graphic accelerator driver is automatically installed on setup with EXPRESSBUILDER.

After installation of Starter Pack, the screen may corrupt when returning from power-saving mode. To avoid this, specify **Never** for **Turn off the display** in Power Options.

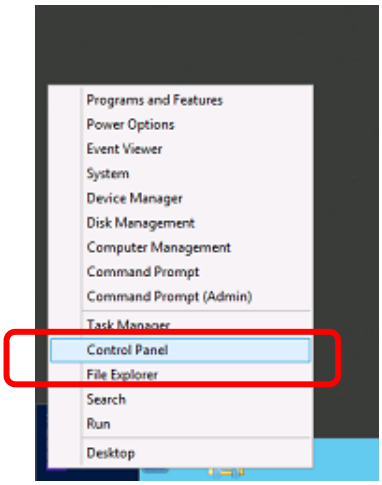
To reinstall drivers separately, follow the steps below.

1. Click **Settings** on the Charms bar, or right-click the bottom left corner on the screen and click **Control Panel**. The screen shown in Step 3 appears.

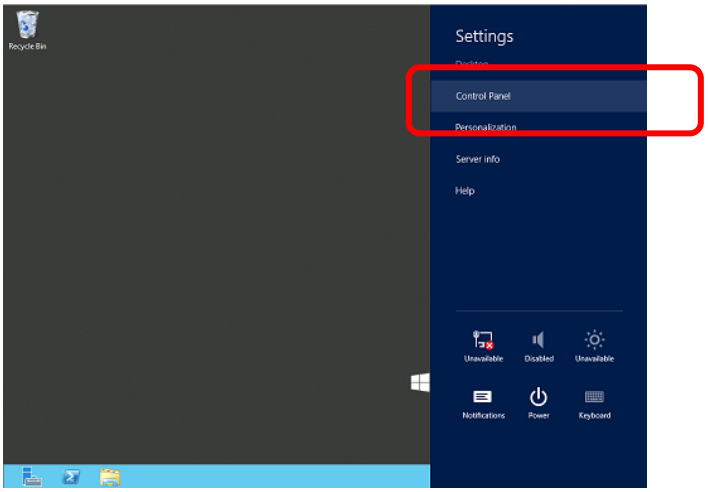
Select **Settings**



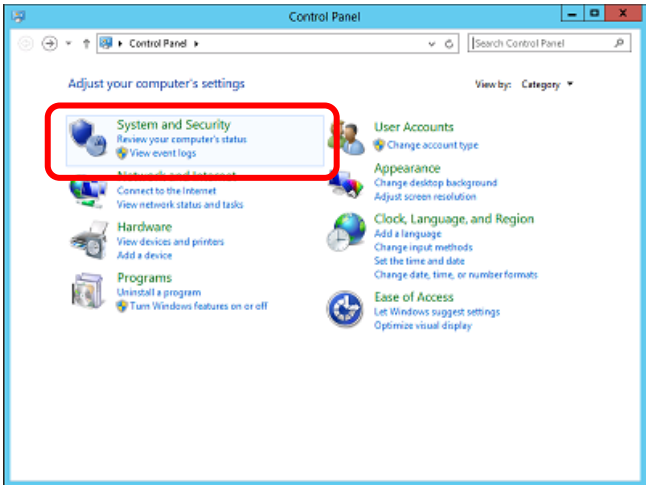
Select **Control Panel**



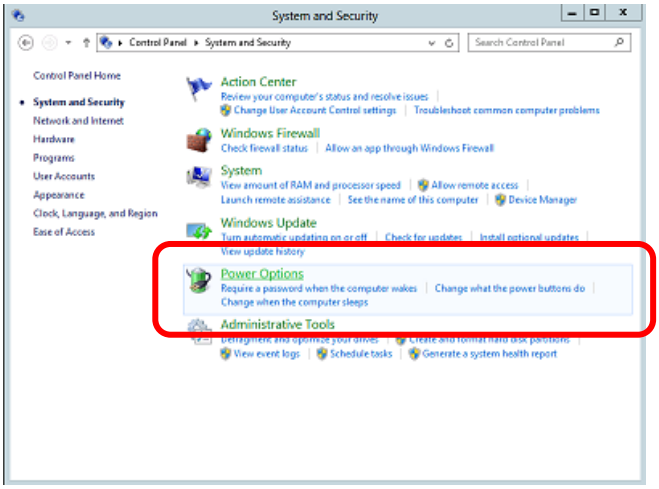
2. Under **Settings**, click **Control Panel**.



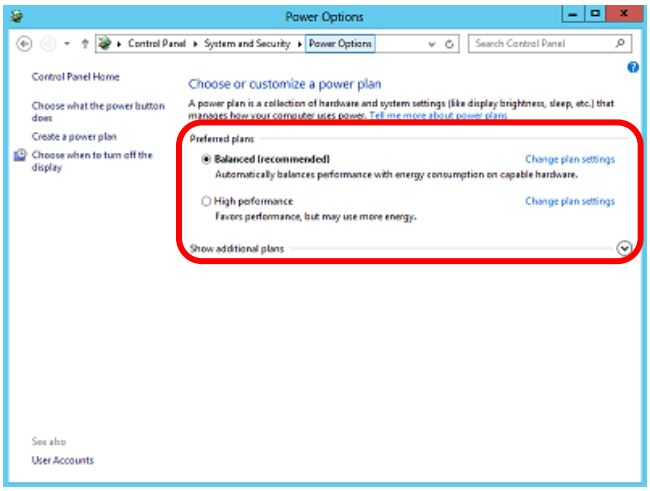
3. Click **System and Security**.



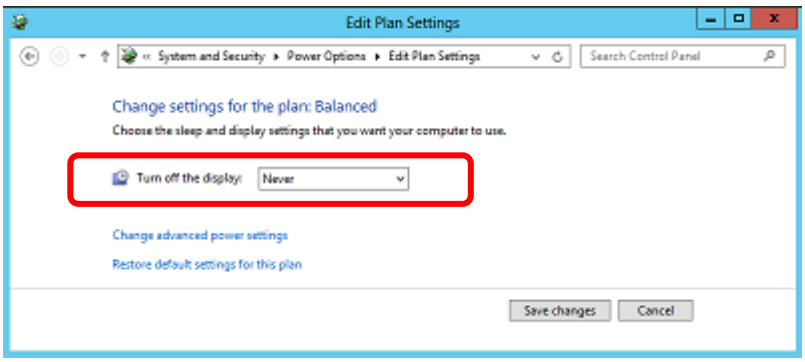
4. Double-click **Power Options**.



5. Choose the **Balanced** option in **Preferred plans**, and then click **Change plan settings**.


Power Options
Control Panel Home
Choose what the power button does
Create a power plan
Choose when to turn off the display
Choose or customize a power plan
A power plan is a collection of hardware and system settings (like display brightness, sleep, etc.) that manages how your computer uses power.
Preferred plans
Balanced (recommended)
Automatically balances performance with energy consumption on capable hardware.
Change plan settings
High performance
Favors performance, but may use more energy.
Change plan settings
Show additional plans
See also
User Accounts

6. Select **Never** in the **Turn off the display** list, and then click **Save changes**.


Edit Plan Settings
System and Security ▸ Power Options ▸ Edit Plan Settings
Search Control Panel
Change settings for the plan: Balanced
Choose the sleep and display settings that you want your computer to use.
Turn off the display:
Never
Change advanced power settings
Restore default settings for this plan
Save changes
Cancel

Graphic accelerator driver installation is now complete.

3.5.4 Using a SAS Controller(N8103-142)

The driver for SAS Controller N8103-142 is automatically installed by Windows Plug-and-Play.

3.5.5 Using a RAID Controller (N8103-161)

The driver for RAID Controller N8103-161 is automatically installed by Windows Plug-and-Play.

3.5.6 Using a Fibre Channel controller (N8190-153/154)

The driver for Fibre Channel controller N8190-153/154 is automatically installed by Windows Plug-and-Play.

3.6 License Authentication

To use Windows Server 2012, perform the license authentication procedure.

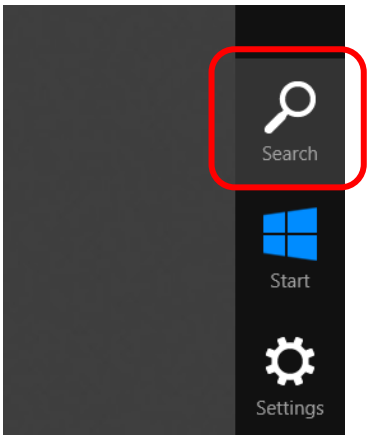
Confirm if your license is authenticated. If not, perform the following procedures to have your license authenticated.

Connect to the Internet to perform the authentication procedure, or use the telephone to perform the authentication procedure.

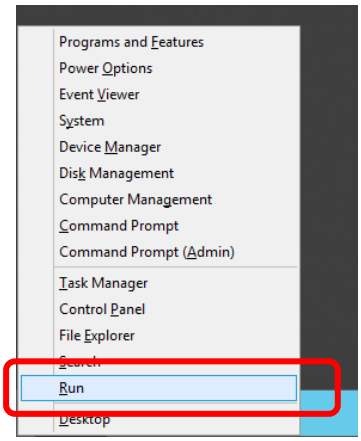
(1) Server with a GUI

1. Click **Search** on the Charms bar, or right-click the bottom left corner on the screen and click **Run**.

Search

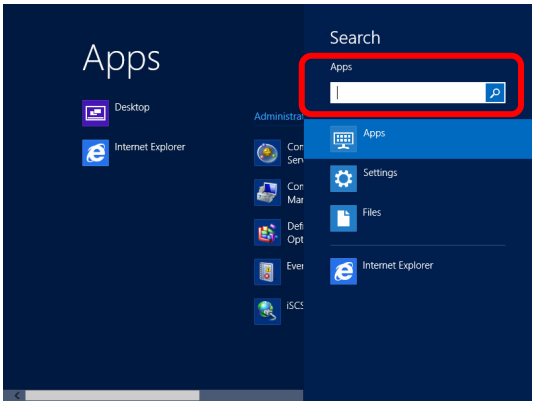


Run

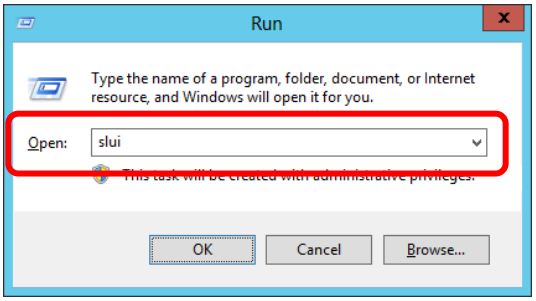


2. Type "slui" in the **Search** box, and then press the <Enter> key.

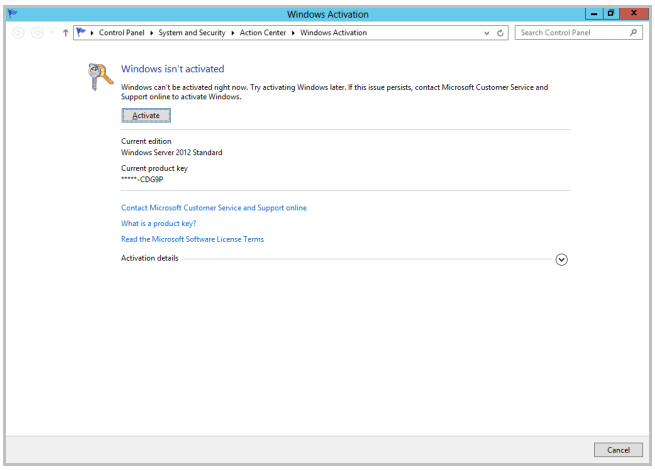
Search



Run



3. Read the message, and then continue the license authentication procedure.


Windows Activation
Control Panel ▸ System and Security ▸ Action Center ▸ Windows Activation
Search Control Panel
Windows isn't activated
Windows can't be activated right now. Try activating Windows later. If this issue persists, contact Microsoft Customer Service and Support online to activate Windows.
Activate
Current edition
Windows Server 2012 Standard
Current product key
*****-CDG9P
Contact Microsoft Customer Service and Support online
What is a product key?
Read the Microsoft Software License Terms
Activation details
Cancel

Tips If your license is already authenticated, you need not perform this procedure.

Windows activation is now complete.

(2) Server Core installations

1. Type the following at the command prompt, and then press <Enter> key.
   `slmgr -dli`

```
C:\Users\administrator>slmgr –dli
```

If license authentication is required, go to the next step.

If your license is already authenticated, you can skip the next and the subsequent steps.

2. Change the product key.

Using Backup DVD:

Type the following command, and then press the <Enter> key.

```
C:\Users\administrator>slmgr –ipk <Product key on COA label>
```

Using Windows Server 2012 DVD-ROM:

You do not need to change the product key.
Go to the next step.

3. Perform license authentication.

Using the Internet:

License authentication is performed through the Internet.
Type the following command, and then press the <Enter> key.

```
C:\Users\administrator>slmgr –ato
```

The authentication is now complete.

Not using the Internet:

Use telephone for license authentication.

Type the following command, and then press the <Enter> key.

```
C:\Users\administrator>slmgr -dti
```

Get an Install ID for license authentication.

Refer to the file "%systemroot%\system32\sppui\phone.inf" to confirm the telephone number of Microsoft Licensing Center.

Call Microsoft Licensing Center and tell them your Install ID.

Type the confirmation ID you have received in the following command, and then press the <Enter> key.

```
C:\Users\administrator>slmgr –atp <Confirmation ID>
```

The authentication is now complete.

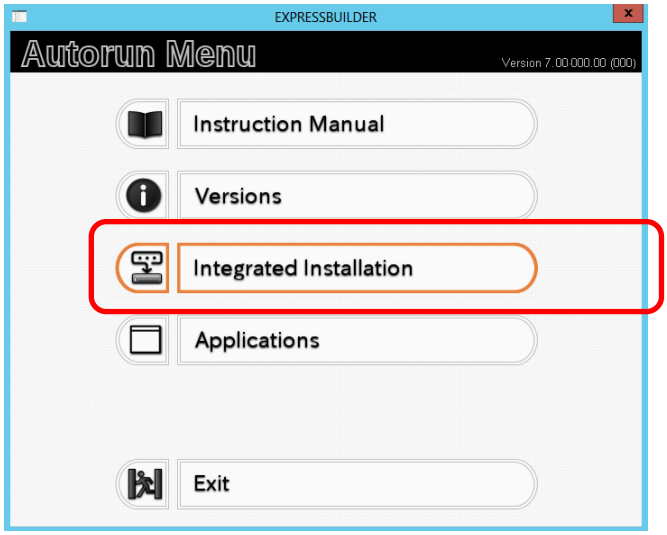
3.7 Installing the Applications

EXPRESSBUILDER includes applications such as NEC ESMPRO Agent or NEC ESMPRO Manager. Some applications can be installed collectively by performing the procedures described below. When installing these applications individually, see *Chapter 2* (*Installing Bundled Software*). This feature is *only available on the server with a GUI*.

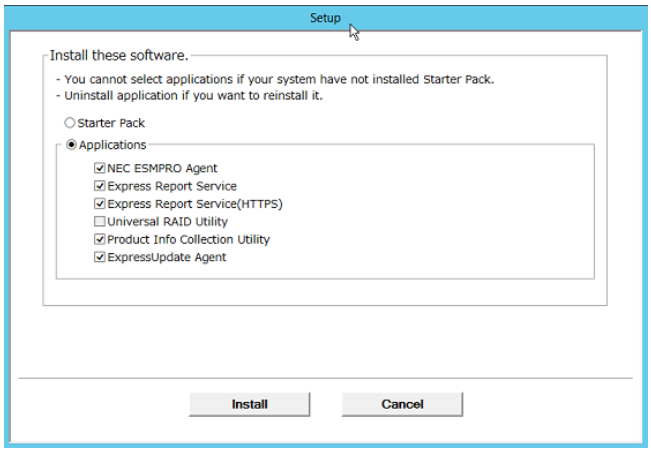
1. Sign in Windows on the server with the *Built-in Administrator* or an account having administrative privilege.

2. Insert the EXPRESSBUILDER DVD into the optical disk drive.

3. Click **Integrated Installation** on the menu.



4. Click **Applications** and select the check boxes corresponding to the applications to install, and then click **Install**.



Note If your system does not satisfy the requirements for an application installation, you cannot install it. For details, refer to the on-screen information and the relevant page of each application.

The selected applications are automatically installed.

5. When a message appears, click **Restart**, and then remove the EXPRESSBUILDER disc from the optical disk drive.

Now installation of applications is complete.

3.8 Installing With Multiple Logical Drives

Backup data for future use in case of data loss before starting installation.

(1) Installing

– Setup with EXPRESSBUILDER

Important **Before starting setup, be sure to disconnect hard disk drives from the RAID controller that is not to be setup. Install those hard disk drives after setup has completed. Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally.**

See *Chapter 1 (3.2 Setup with EXPRESSBUILDER)*, and proceed with setup.

In this case, EXPRESSBUILDER installs the Windows on the first detected hard disk drive or logical drive.

– Setup with Windows standard installer

1. See *Chapter 1 (3.3 Setup with Windows Standard Installer)*, and start setup.
2. When the following message appears, select the partition to which you want to install the operating system.

```
Select the location to which Windows will be installed
```

The order and numbers of the disks displayed on the screen **might not match the server's slot** of the hard disk drives. **Distinguish between the hard disk drives by viewing the hard disk drive capacity and partition size** displayed on the screen, and then select a drive to install the Windows system.
Selecting an improper drive might cause an unintentional corruption of the existing data. Be careful when selecting a hard disk drive on which to install the system.

Important
- **For details, refer to the following Microsoft website: http://support.microsoft.com/kb/937251/en-us**
- **You cannot edit the drive letters for the system volume or boot volume after setup is complete. Make sure that the drive letters assigned in this window are correct, and then proceed with setup.**

3. See *Chapter 1 (3.3 Setup with Windows Standard Installer)*, and proceed to setup Windows with Windows standard installer and the instructions.

Tips The drive letter might change after installation. If you want to change the drive letter, use the procedure shown in *Changing drive letter assignments* below.

(2) Changing drive letter assignments

To change the drive letter, follow the steps below. These steps cannot change drive letter assignments for the system volume or boot volume. If you want to change them, re-install the Windows.

1. From the **Start** menu, right-click **Computer** and then select **Management**. Launch **Server Manager**.
2. From the window on the left, select **Storage** and then **Disk Management**.
3. Right-click the volume whose drive letter you want to change, and then select **Change drive letter and path**.
4. Click **Change**.
5. Click **Assign next drive letter**, and then select the drive letter you want to assign.
6. Click **OK**.
7. When the following message appears, read the message and then click **OK**.

```
Some programs are dependent on drive letters, and may
not run properly. Continue?
```

8. Close the Server Manager.

3.9 Setting up for Windows Server 2012 NIC Teaming (LBFO)

Set up the network adapter teaming feature as shown below.

(1) Launching the NIC teaming setup tool

1. Launch Server Manager.
2. Select **Local Server**.
3. In the Properties window, click **Enable** or **Disable** for **NIC teaming**.

   The NIC teaming setup tool will launch.

Tips

The NIC teaming setup tool can also be launched by opening the **Run** dialog box, typing `lbfoadmin`, and then pressing the <Enter> key.

(2) Creating a team

Create a team by using the NIC teaming setup tool.

1. In the **Servers** section, select the name of the server to set up.

   If there is only one server connected, the name of the server is selected automatically.
2. In the **Teams** section, under **Tasks**, select **New Team**. The **New Team** wizard then starts.
3. Type the name of the team to create, and then select the network adapter to include in the team from the **Member adapters** list.
4. Click **Additional properties**.
5. Specify the required settings, and then click **OK**.

Teaming mode

Static Teaming	Configures static aggregation between the NIC and switches.
Switch Independent	Configures teaming on the NIC side without depending on the switch settings.
LACP	Configures dynamic aggregation between the NIC and switches.

Load balancing mode

Address Hash	Distributes the load based on IP addresses and port numbers.
Hyper-V Port	Distributes the load to each of the virtual switch ports used by the virtual machines.

Standby adapter

Select one adapter to be set to standby mode from the adapters in the team.

Setting all adapters to active mode is also possible.

Primary team interface

Any VLAN ID can be specified for the primary team interface.

(3) Notes and restrictions

NIC teaming on a guest OS is not supported in the Hyper-V environment.

4. Setting Up Windows Server 2008 R2

Set up Windows Server 2008 R2.

4.1 Before Starting Setup

Read through the cautions explained here before starting setup.

EB : Confirm during Setup with EXPRESSBUILDER

OS : Confirm during Setup with Windows standard installer

Hardware configuration		
The following hardware configurations require special procedures.		
EB	OS	**Reinstalling to a mirrored volume** When you install Windows Server 2008 R2 in an environment with a mirrored volume created using Windows, disable mirroring before installing the operating system and enable it again after the installation. Use [Computer Management] – [Disk Management] to create, disable, or remove the mirrored volume.
EB	OS	**Peripheral devices such as RDX/MO** Remove an MO device before installing an OS. Some peripheral devices need to be halted before installation. Refer to the manual provided with the peripheral devices for how to set a device appropriate to installation.
EB	OS	**DAT, LTO, and similar media** Do not set media that is unnecessary to installation during setup.
EB	OS	**Connecting to multiple hard disk drives (logical drives)** For details on installing operating systems to a system in which multiple logical drives exist, refer to *Chapter 1* (*4.9 Installation When Multiple Logical Drives Exist*).
EB	OS	**Reinstalling to hard disk drives that have been upgraded to dynamic disks** If the hard disk drive has been upgraded to a dynamic disk, the operating system cannot be reinstalled to it with the existing partitions. Set up the operating system with the Windows standard installer.

EB OS

Setup when mass memory is installed

If mass memory is installed in your system, the large size of paging file is required at installation. Thus, the partition size for storing debug information (dump file) may not be secured.

If you fail to secure the dump file size, use Windows standard installer for setup, and allocate the required file space to multiple disks by performing the following steps.

1. Set the system partition size to a size sufficient to install the OS and paging file.
2. Specify another disk as destination to store the debug information (required dump file size) by referring to *Chapter 1 (6. Setup for Solving Problems)*.

If the hard disk drive does not have enough space to write the debug information, set the partition size to a size sufficient to install the OS and paging file, and then add another hard disk drive for the dump file.

Note

If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.

If sufficient space cannot be secured for the paging file, perform either of the following after setting up using Windows Standard Installer is complete.

— **Specify a hard disk drive other than the system drive as the location to store the paging file for collecting memory dump**

Create a paging file of the installed memory size + 300 MB or more in a drive other than the system drive.

The paging file that exists in the first drive (in the order of drive letter C, D, E, ...) is used as the temporary memory dump location. Therefore, the size of the paging file must be "installed memory size + 300 MB" or more. Paging files in dynamic volumes are not used for dumping memory. The setting is applied after restarting the system.

Example of correct setting
C: No paging file exists **D: Paging file whose size is "installed memory size + 300 MB" or more** → The paging file in drive D can be used for collecting memory dump because its size satisfies the requirement.

Example of incorrect setting 1
C: Paging file whose size is smaller than the installed memory size **D: Paging file whose size is "installed memory size + 300 MB" or more** → The paging file in drive C is used for collecting memory dump, but collection may fail because the size of the paging file is smaller than the installed memory size.
Example of incorrect setting 2
C: Paging file whose size is "installed memory size × 0.5" **D: Paging file whose size is "installed memory size × 0.5"** **E: Paging file whose size is 300 MB** → The total paging file size in all drives is "installed memory size + 300 MB", but collection may fail because only the paging file in drive C is used for collecting memory dump.
Example of incorrect setting 3
C: No paging file exists **D: Paging file whose size is "installed memory size + 300 MB" or more (in dynamic volume)** → Paging files in a dynamic volume cannot be used for collecting memory dump. Thus, collecting memory dump fails.

— Specify a drive other than the system drive for "Dedicated Dump File".

Create the registry shown below by using the Registry Editor and specify the name of Dedicated Dump File.

<When specifying the file named "dedicateddumpfile.sys" in drive D>

Key:	HKEY_LOCAL_MACHINE\SYSTEM \CurrentControlSet\Control\CrashControl
Name:	DedicatedDumpFile
Type:	REG_SZ
Data:	D:\dedicateddumpfile.sys

Note the following when specifying Dedicated Dump File:

- Pay strict attention to edit the registry.
- The setting is applied after restarting the system.
- Specify a drive that has free space of "installed memory size + 300 MB" or more.
- Dedicated Dump File cannot be placed in dynamic volumes.
- To collect memory dump by using Dedicated Dump File, a paging file is required in any drive.
- Dedicated Dump File is only used for collecting memory dump, and is not used as virtual memory. Specify the paging file size so that sufficient virtual memory can be allocated in the entire system.

System partition size

EB OS

The system partition size can be calculated by using the following formula.
Size required to install the OS + paging file size + dump file size + application size

Full installations

Size required to install the OS	= 15,600 MB (Windows Server 2008 R2 + Service Pack 1) = 8,400 MB (Windows Server 2008 R2 with Service Pack 1) = 8,000 MB (Windows Server 2008 R2)
Paging file size (recommended)	= installed memory size × 1.5
Dump file size	= installed memory size + 300MB
Application size	= as required by the application

Server Core installations

Size required to install the OS	= 11,100 MB (Windows Server 2008 R2 + Service Pack 1) = 3,700 MB (Windows Server 2008 R2 with Service Pack 1) = 3,500 MB (Windows Server 2008 R2)
Paging file size (recommended)	= installed memory size × 1.5
Dump file size	= installed memory size + 300MB
Application size	= as required by the application

For example, if the installed memory size is 1 GB (1,024 MB) and Full installation**s** is selected, the partition size is calculated as follows:

8,000 MB + (1,024MB × 1.5) + 1,024MB+ 300MB+ application size

= 10,860MB + application size

The above mentioned partition size is the minimum partition size required for system installation. Ensure that the partition size is sufficient for system operations.

The following partition sizes are recommended.

Full installations : 32,768MB(32GB) or more

Server Core installations : 10,240MB(10GB) or more

*1 GB = 1,024 MB

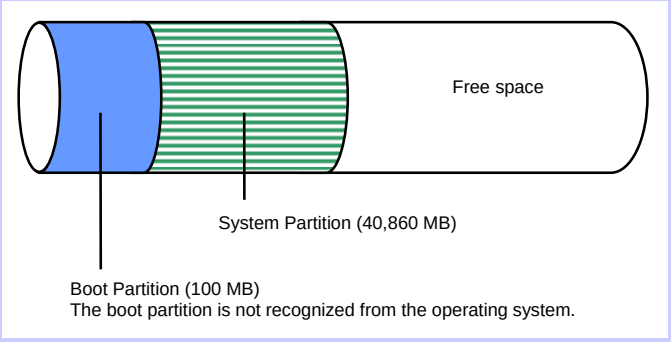
Note

- The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the Windows partition paging file must be large enough to store dump files.
  Make sure you set a sufficient paging file size. If the paging file is insufficient, there will be a virtual memory shortage that may result in an inability to collect correct debug information.
- Regardless of the sizes of internal memory and write debug information, the maximum size of the dump file is "size of internal memory + 300 MB".
- When installing other applications or other items, add the amount of space needed by the application to the partition.

If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.

Tips

When creating a new partition, Windows OS assigns an initial boot partition of 100 MB.
For example, when making a partition of 40,960 MB (40 GB), usable space will be 40,960 MB – 100 MB = 40,860 MB.


Free space
System Partition (40,860 MB)
Boot Partition (100 MB)
The boot partition is not recognized from the operating system.

Hyper-V 2.0 support

EB OS

Refer to the following web site for information related to Hyper-V 2.0.

http://www.58support.nec.co.jp/global/download/w2k8r2/hyper-v/hyper-v-v2.html

Using BitLocker

EB OS

If using BitLocker, note the following.

- Be sure to keep the recovery password secure. Do not keep it near a server running BitLocker.

Important

If the recovery password is not entered, the OS cannot be started, and the content of the partition encrypted by BitLocker cannot be referenced any more.

The recovery password might be required at startup of the OS after the following:

- **Replacement of motherboard**
- **Initialization of trusted platform module (TPM)**
- **Change of BIOS setting**

- To reinstall the operating system into a partition that is encrypted with BitLocker, delete the BitLocker-encrypted partition prior to reinstallation.

- Microsoft releases software updates for BitLocker encryption. If using BitLocker, it is important that you read through the information provided by Microsoft. Also read through the checklist published by Microsoft.
  For details, visit **http://support.microsoft.com/kb/975496/en-us.**

Installing Service Pack	
EB OS	● If the OS installation media contains Service Pack 1, you need not apply the service pack again. ● You can install the Service Pack on the server. When the Service Pack is not attached to your system, prepare it by yourself.
License authentication	
EB OS	License authentication is required depending on the installation of Windows. For details, refer to *4.6 License Authentication*. **Note** • Activate within 30 days following installation. • A virtual product key is used when installing in a virtual environment. It is not used when directly installing an operating system to a physical server.

4.2 Setup with EXPRESSBUILDER

This section describes how to install Windows with EXPRESSBUILDER.

This feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following " *User's Guide* ".

Important

- **Setup with EXPRESSBUILDER may delete all data of the hard disk drive depending on the settings. Pay attention to input parameters. You must be especially careful when configuring the following:**
  - **– RAID settings**
  - **– Partition Settings**

  Backing up user data, as needed, is recommended.
- **Before starting setup, be sure to disconnect hard disk drives from the RAID Controller that is not to be setup. Install those hard disk drives after setup has completed. Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally. It is recommended to make backup copy of user data before starting setup.**

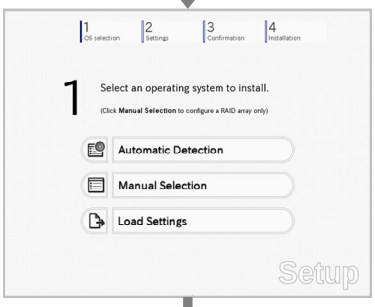
Note

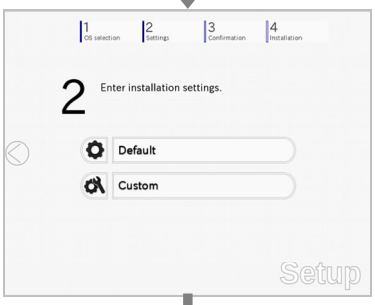
The Scalable Networking Pack (SNP) function is disabled on systems that have been installed by using EXPRESSBUILDER.
The setting of SNP function may affect the system performance.
Contact your sales representative for details.

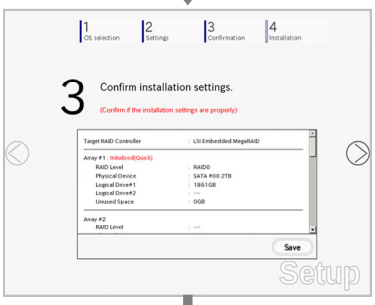
Tips

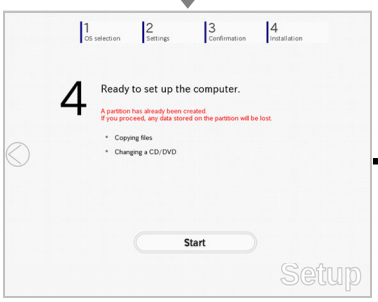
- Setup with EXPRESSBUILDER allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, refer to *7. Windows OS Parameter File*.

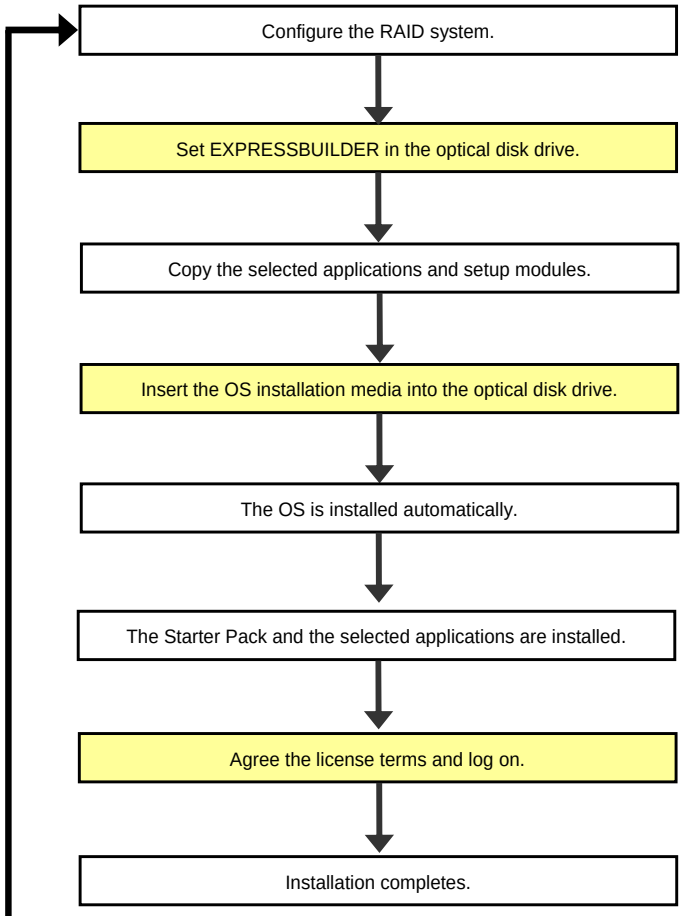
4.2.1 Setup flow










Configure the RAID system.
Set EXPRESSBUILDER in the optical disk drive.
Copy the selected applications and setup modules.
Insert the OS installation media into the optical disk drive.
The OS is installed automatically.
The Starter Pack and the selected applications are installed.
Agree the license terms and log on.
Installation completes.

	Process that requires input or selection
	Process that proceeds automatically

4.2.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

- Either of the following OS installation media
  - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
  - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2008 R2 DVD-ROM*)
- **First Steps Guide**
- Either of the following EXPRESSBUILDER
  - **EXPRESSBUILDER DVD**
  - **Internal Flash Memory** (optional)
- Prepare if needed:
  - **Removable media for Windows OS parameter file**
  - **Service Pack**
    (If the OS installation media contains Service Pack 1, you need not apply the service pack again.)

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory. EXPRESSBUILDER can be run from Internal Flash Memory if it is installed in the server.
- If you are using a server with Internal Flash Memory installed, you can install the OS without using EXPRESSBUILDER DVD.

4.2.3 Setup procedure

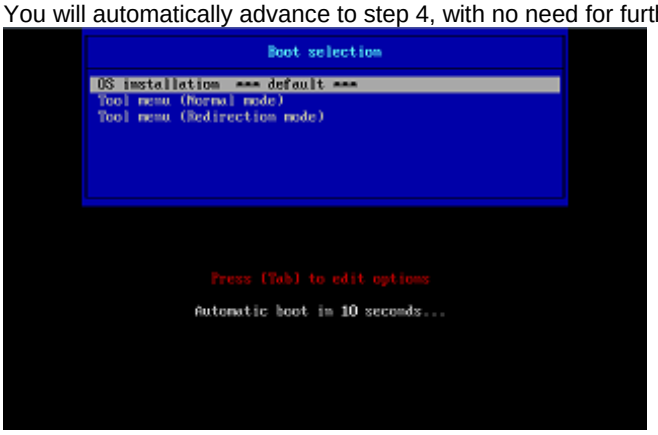
During Setup with EXPRESSBUILDER, parameters are specified through the wizard. You can also save the parameters as one file (a parameter file) to removable media.

Note Read through the items in Chapter 1 (4.1 Before Starting Setup) prior to installing Windows.

1. Turn peripheral device (such as a display) power on, and then turn the server power on.

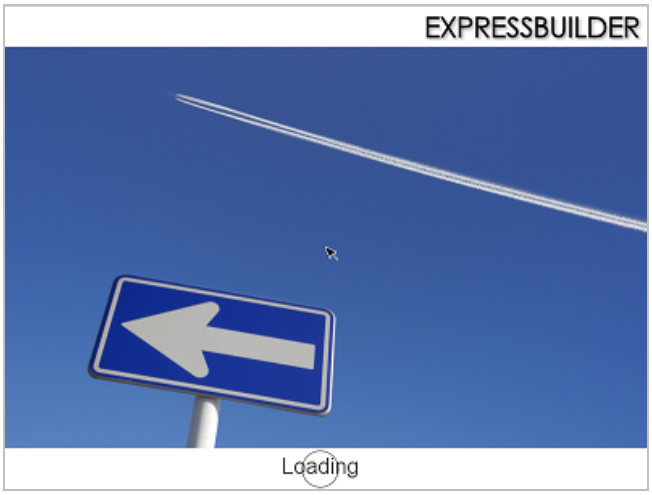
2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.

3. Select **Os installation *** default ***.**
You will automatically advance to step 4, with no need for further input.


Boot selection
OS installation *** default ***
Tool menu (Normal mode)
Tool menu (Redirection mode)
Press (Tab) to edit options
Automatic boot in 10 seconds...

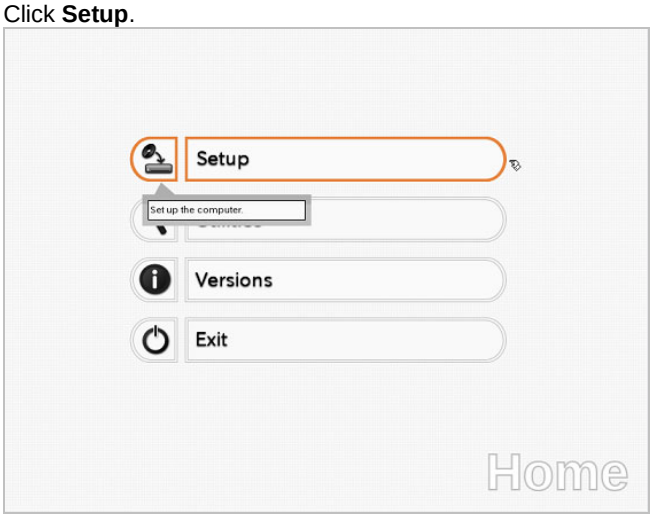
The following window appears.

The server starts from EXPRESSBUILDER.



4. Select **English** on the language selection window, and then click [OK].

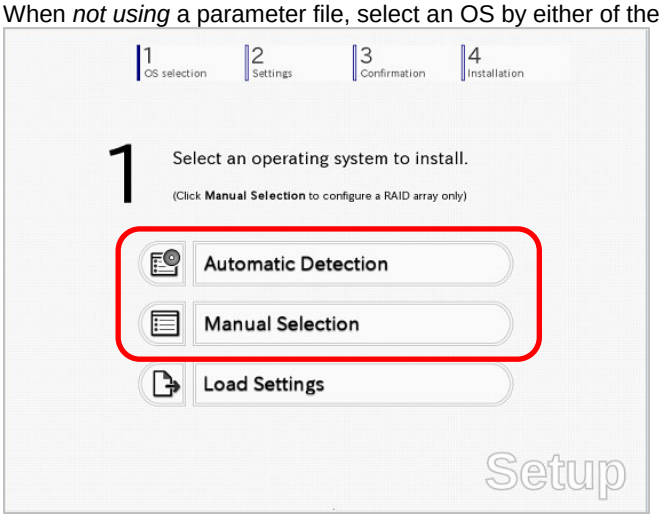
5. Click **Setup**.



6. On the **OS selection** menu, select the OS to install or specify the parameter file.
   ☐ When not using parameter file : Go to Step 7.
   ☐ When using a parameter file : Go to Step 8.

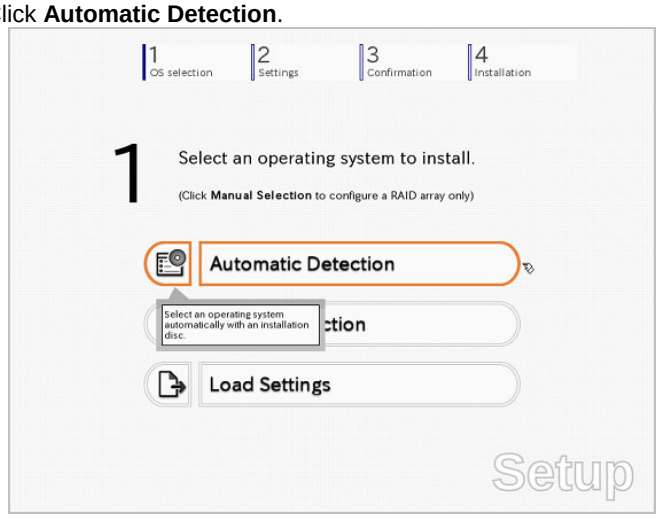
Note When setting up again, parameter input via the wizard can be omitted by loading the saved parameter file.

7. When *not using* a parameter file, select an OS by either of the following two ways:



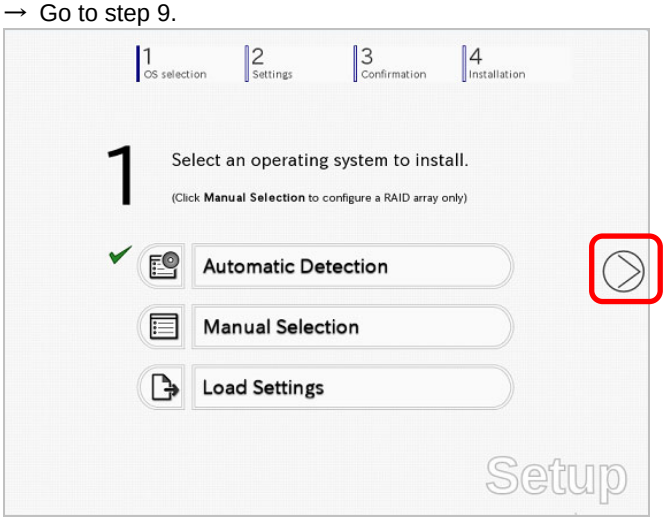
To automatically detect the OS on the OS installation media:

(1) Click **Automatic Detection**.



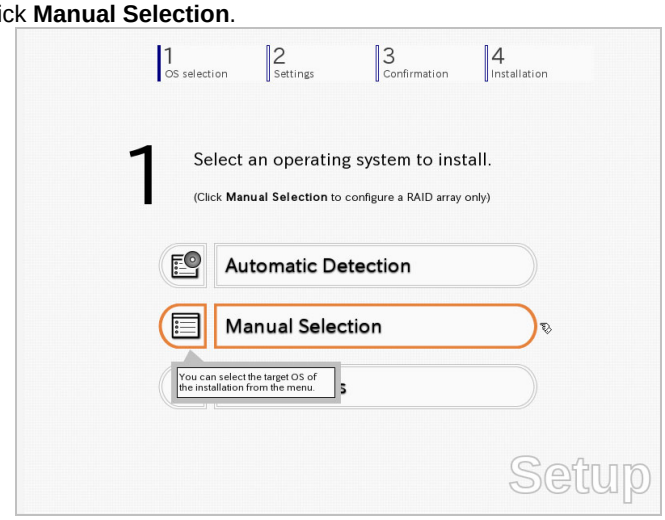
Insert the OS installation media, and then click **OK**.

(2) Click ▷ on the right side of the screen.
→ Go to step 9.



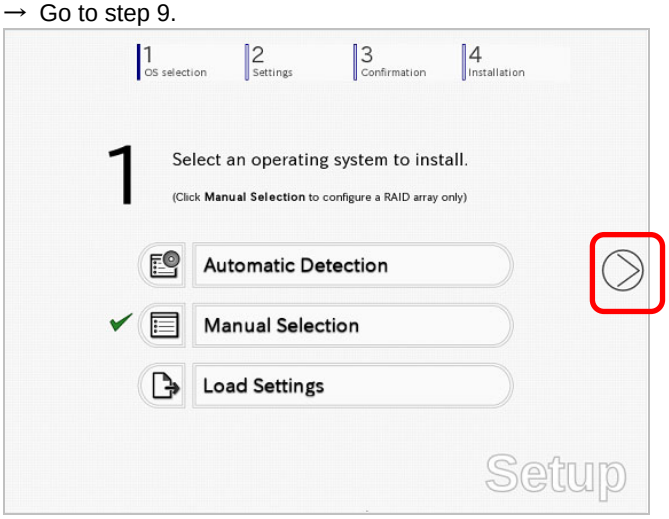
To select an OS from the menu:

(1) Click **Manual Selection**.

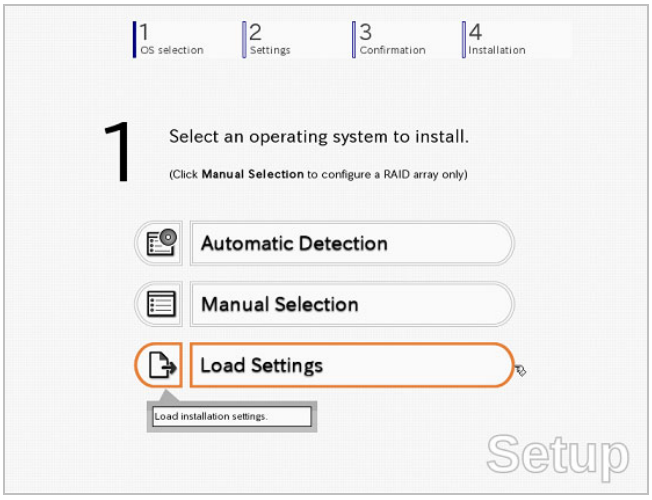


(2) From the **Windows** list, select **Windows Server 2008 R2**, and then click **OK**.

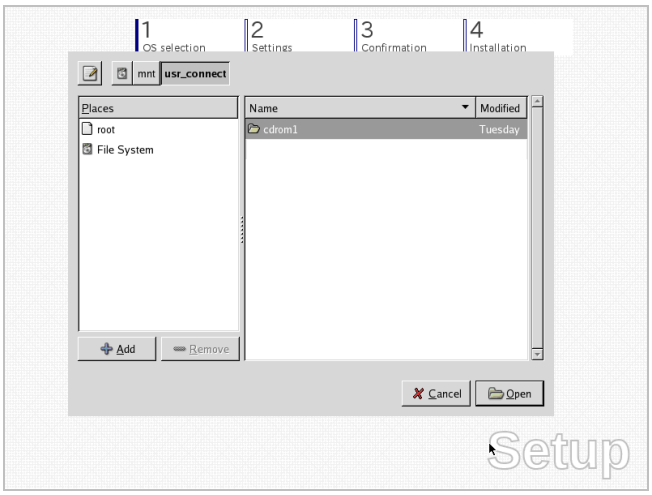
(3) Click ▷ on the right side of the screen.
→ Go to step 9.



8. When *using* the parameter file, click **Load Settings**.



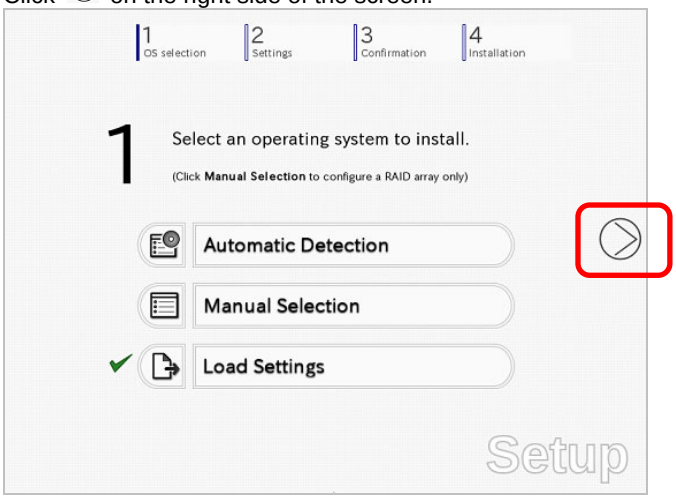
Follow the on-screen instruction to load the parameter file (*.tre).



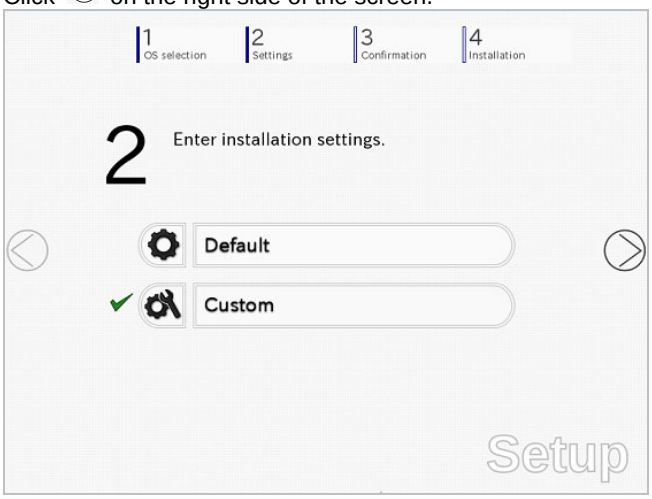
Tips

For the removable media in which the parameter file is saved, see "**/mnt/usr_connect/usb***" (* indicates a number).

Click ▷ on the right side of the screen.

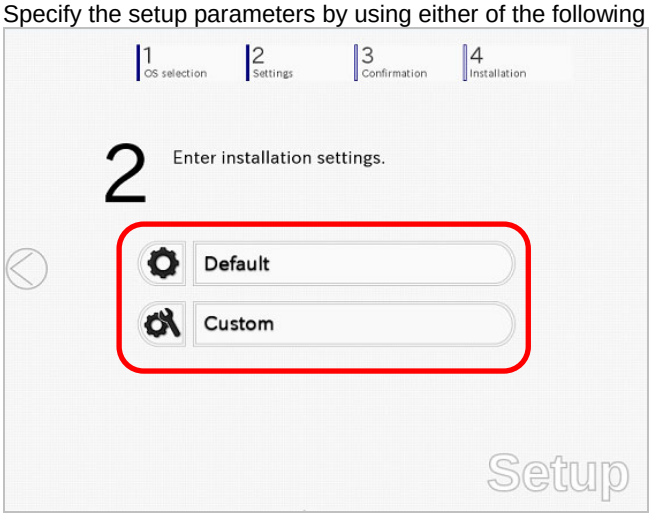


When the parameter file is correctly loaded, the setting is determined.
Click **Custom** to check and modify the setting in the wizard.
Click ▷ on the right side of the screen.



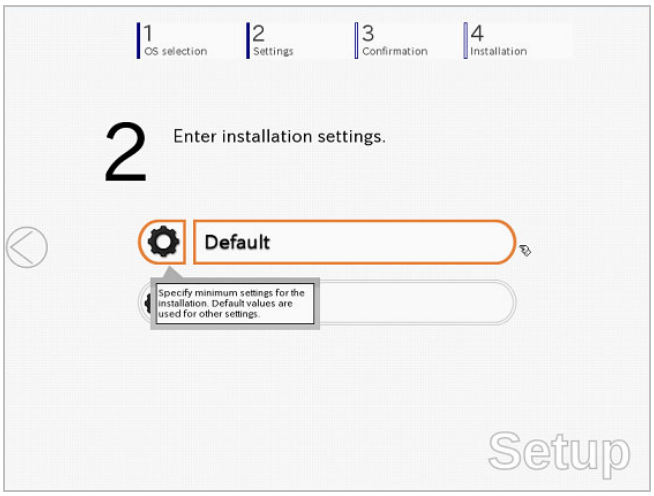
→ Go to step 10.

9. Specify the setup parameters by using either of the following methods:

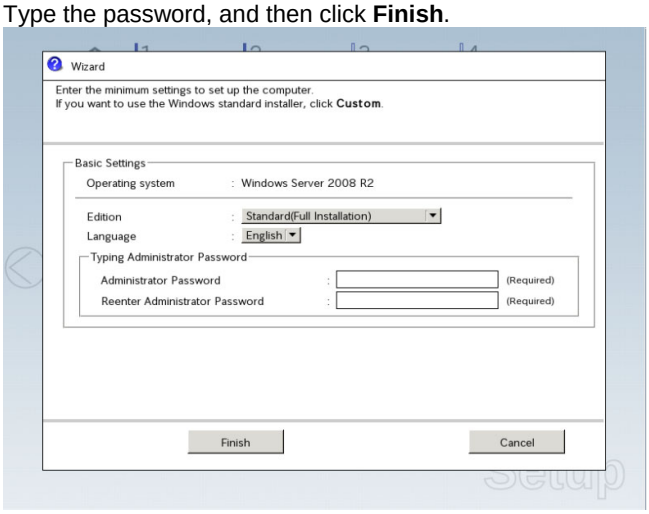


Use Default:

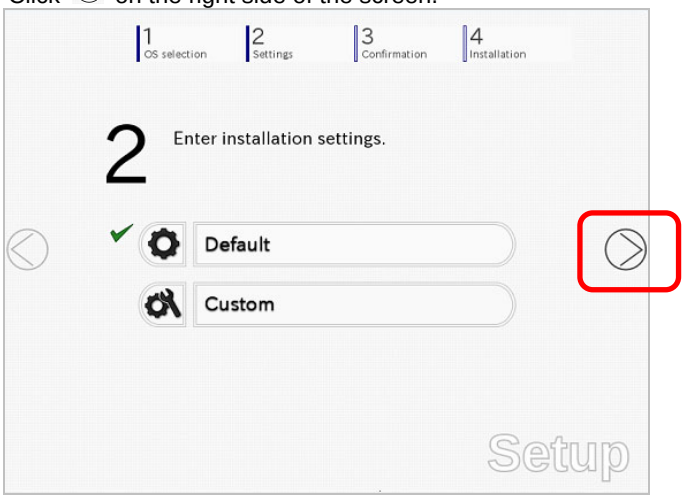
(1) Click **Default.**



(2) Select the edition of the OS to install from the **Edition** list.
Type the password, and then click **Finish**.


Wizard
Enter the minimum settings to set up the computer.
If you want to use the Windows standard installer, click Custom.
Basic Settings
Operating system : Windows Server 2008 R2
Edition : Standard(Full Installation)
Language : English
Typing Administrator Password
Administrator Password : (Required)
Reenter Administrator Password : (Required)
Finish
Cancel

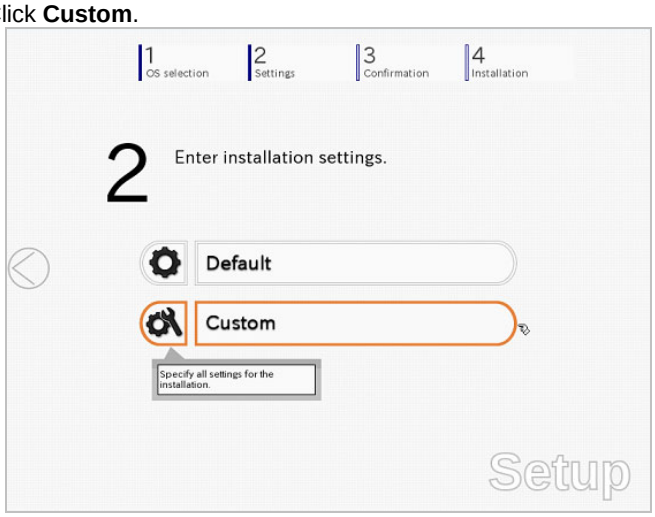
(3) Click ▷ on the right side of the screen.



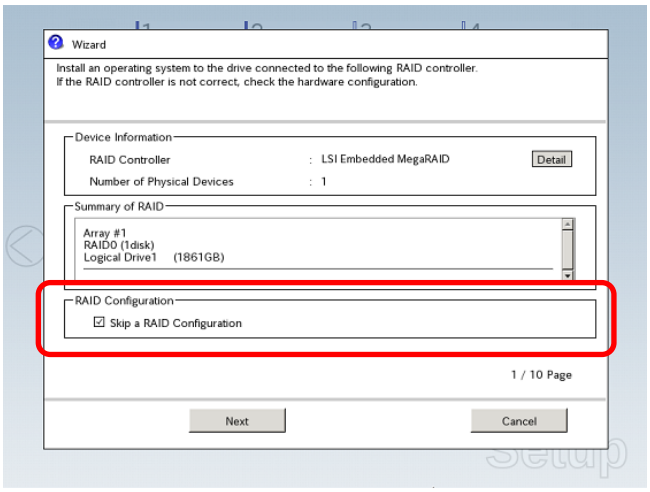
→ Go to step 10.

Use Custom:

(1) Click **Custom**.



(2) Use this menu to configure the RAID system with the RAID controller detected automatically.



When creating new logical drives

With the **Skip a RAID Configuration** check box cleared, click **Next**. Set up the logical drives according to the wizard.

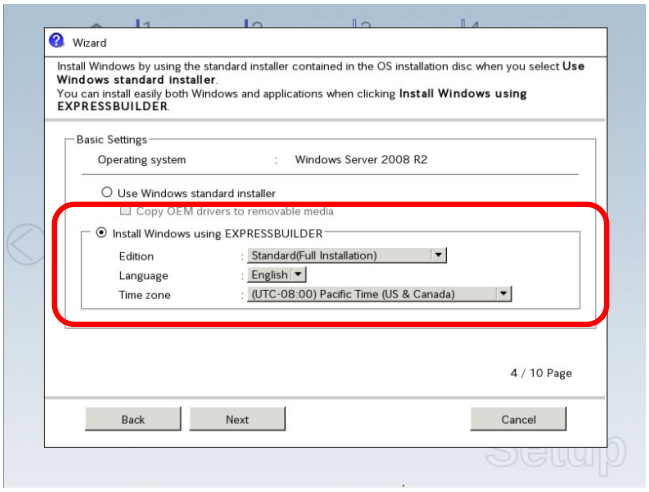
Important **If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.**

When skipping the creation of new logical drives

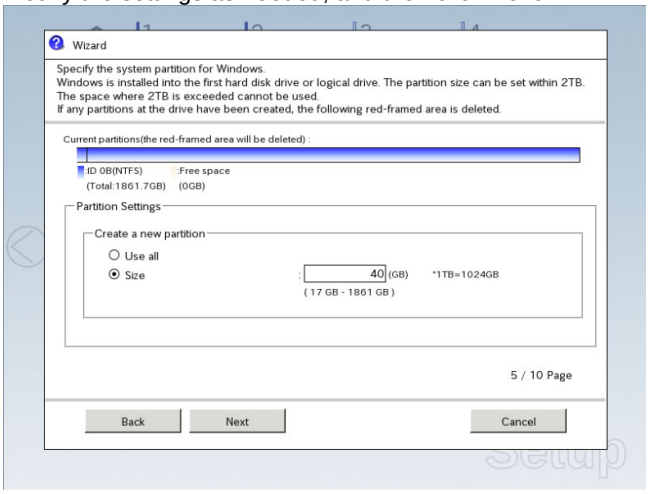
Select the **Skip a RAID Configuration** check box, and then click **Next**.

(3) Check the settings specified for **Basic Settings**.

Select [Install Windows using EXPRESSBUILDER], modify the settings as needed, and then click **Next**.


Wizard
Install Windows by using the standard installer contained in the OS installation disc when you select Use Windows standard installer.
You can install easily both Windows and applications when clicking Install Windows using EXPRESSBUILDER.
Basic Settings
Operating system : Windows Server 2008 R2
Use Windows standard installer
Copy OEM drivers to removable media
Install Windows using EXPRESSBUILDER
Edition : Standard(Full Installation)
Language : English
Time zone : (UTC-08:00) Pacific Time (US & Canada)
4 / 10 Page
Back
Next
Cancel

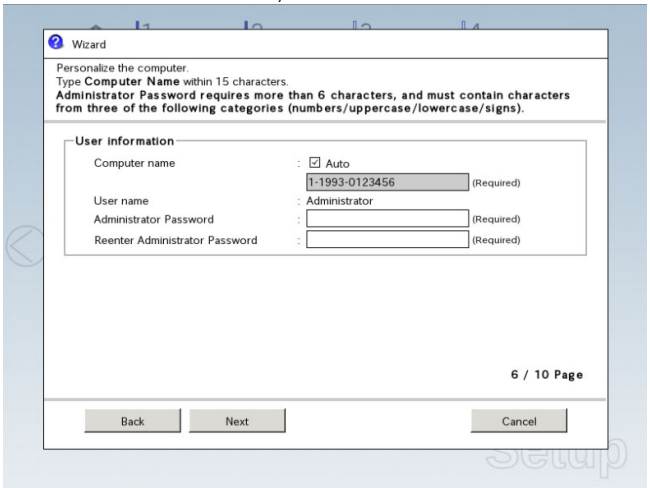
(4) Check the settings specified for **Partition Settings**.
Modify the settings as needed, and then click **Next**.


Wizard
Specify the system partition for Windows.
Windows is installed into the first hard disk drive or logical drive. The partition size can be set within 2TB.
The space where 2TB is exceeded cannot be used.
If any partitions at the drive have been created, the following red-framed area is deleted.
Current partitions(the red-framed area will be deleted) :
!D 0B(NTFS) :Free space
(Total:1861.7GB) (0GB)
Partition Settings
Create a new partition
Use all
Size : 40 (GB) *1TB=1024GB
(17 GB - 1861 GB)
5 / 10 Page
Back
Next
Cancel

Important

- **Backing up user data, as needed, is recommended.**
- **Partition size**
  - **Specify a partition size larger than the minimum required for installing the operating system. (Refer to *Chapter 1 (4.1 Before Starting Setup)*.)**
  - **The maximum partition size is 2,097,152 MB.**
- **If you select *Create a new partition* under *Partition Settings*, the entire contents of the hard disk drive will be deleted.**

(5) Enter the user information, and then click **Next**.



Note

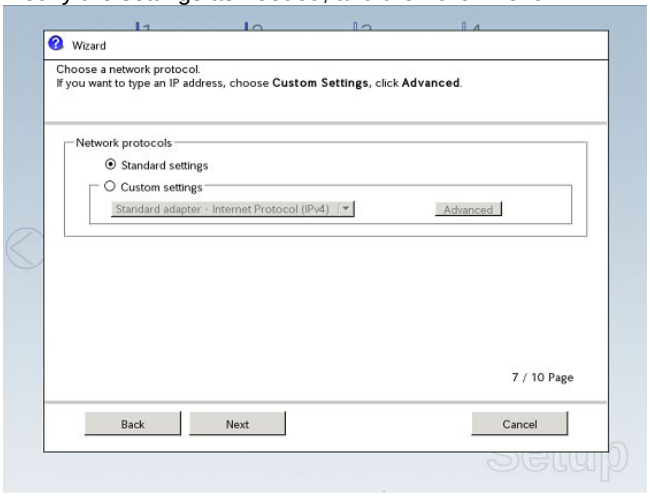
Computer name and Administrator Password are required parameters.
Enter Administrator Password that satisfies the following conditions:

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

Tips

- The Computer name has been assigned by automatic assignment function. If you need to assign another computer name, remove the checkmark from "Auto", and enter the desired computer name.
- If a parameter file is used for setup or if you return to a previous screen, •••••• is displayed in the Administrator password and Reenter Administrator password text boxes.

(6) Check the settings specified for **Network Protocols**.
Modify the settings as needed, and then click **Next**.



Tips

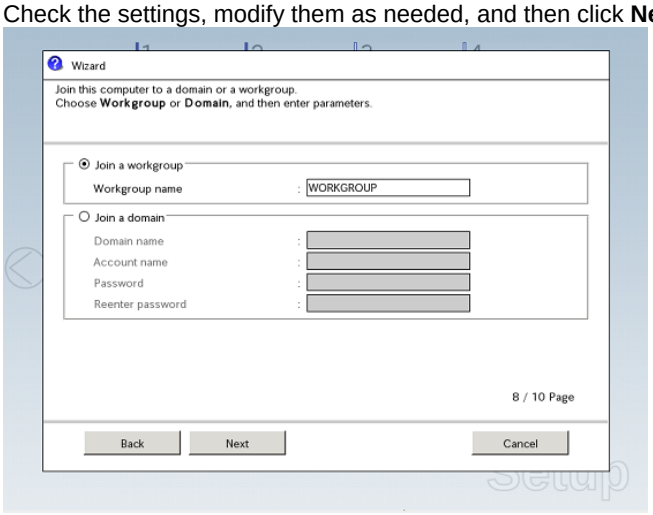
The order of entry in **Custom settings** may differ from the numbering of LAN ports.

Note

Even when an optional network board is connected, **Custom settings** only shows standard network boards.

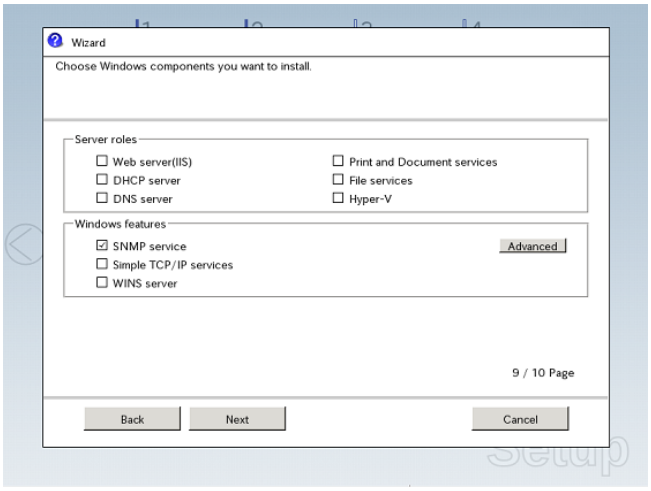
After finishing Setup with EXPRESSBUILDER, specify the optional network settings again.

(7) Specify the domain or workgroup.
Check the settings, modify them as needed, and then click **Next**.

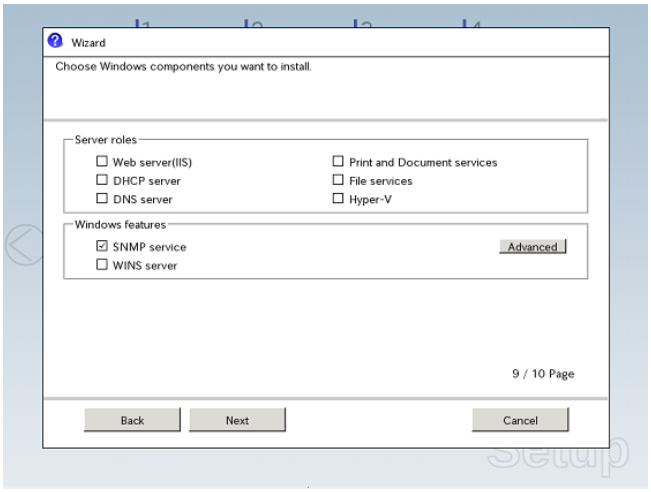


(8) Check the settings of Windows components.

Modify the settings as needed, and then click **Next**.

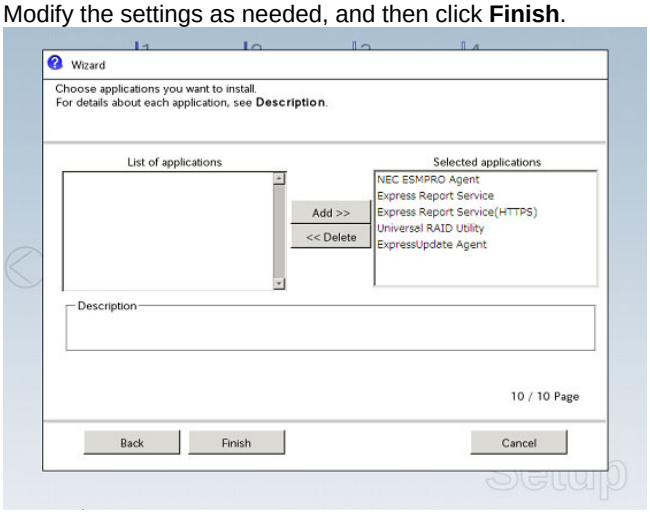


Full installations

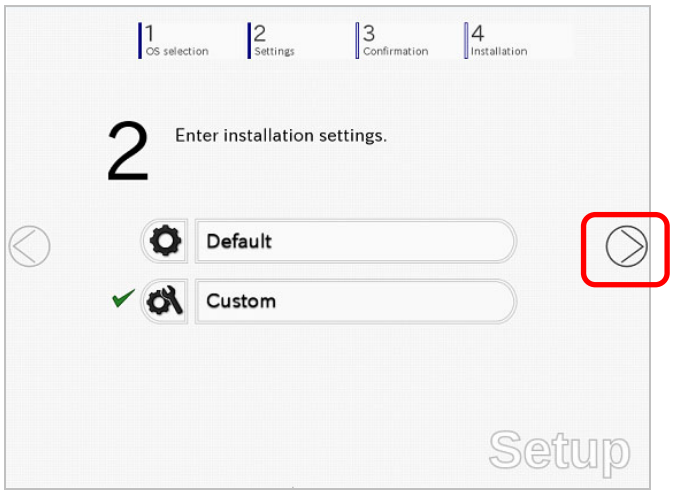


Server Core installations

(9) Check the settings of applications.
Modify the settings as needed, and then click **Finish**.

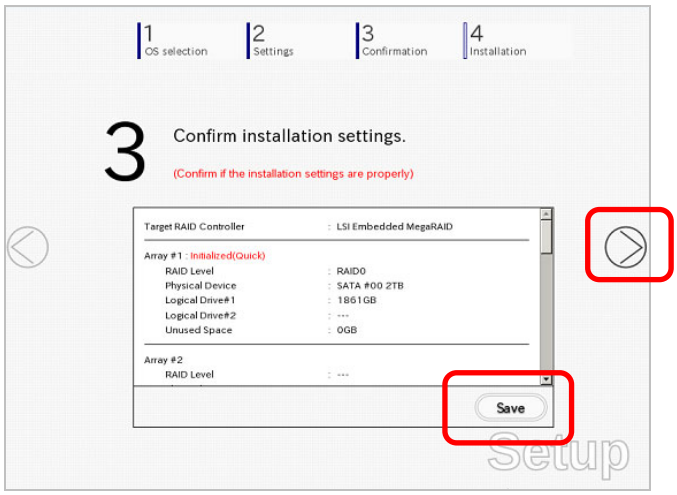


On the following screen, click ▷ on the right side of the screen.



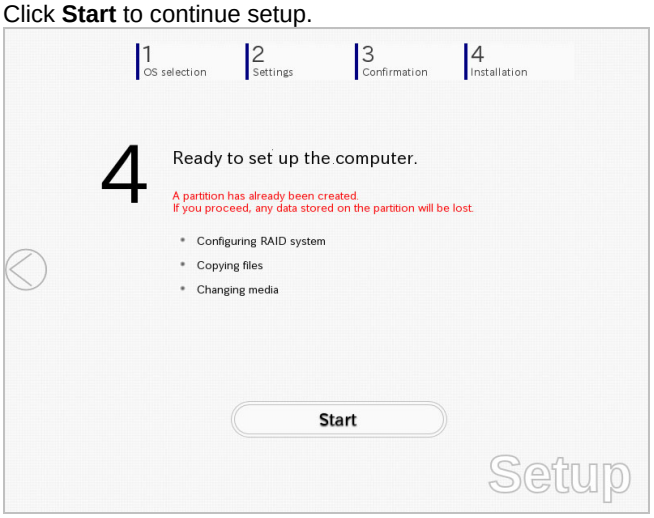
10. Check the parameter settings.

To save the settings, click **Save**.



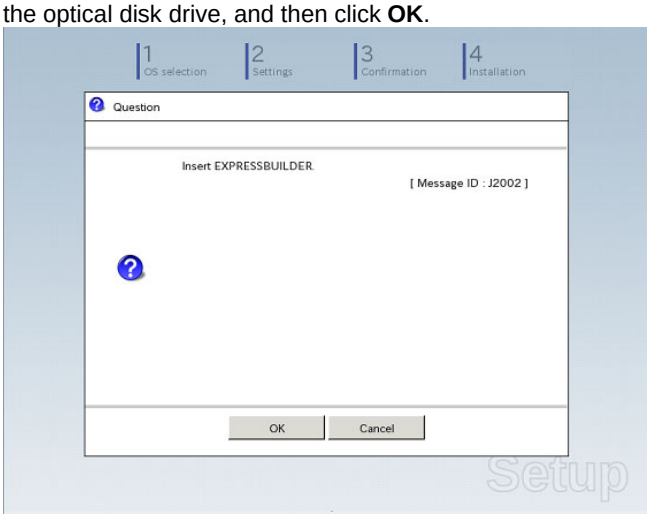
Click ▷ on the right side of the screen.

11. The setup process starts.
    Click **Start** to continue setup.

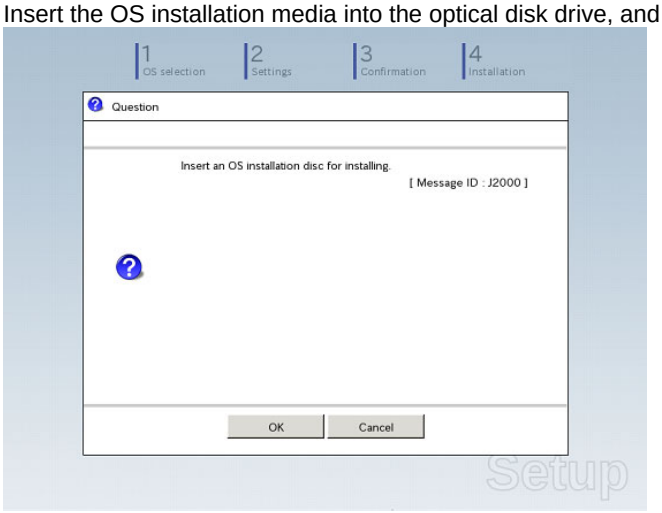


    If you need to suspend setup due to reasons such as backing up data, restart the setup process from the beginning.

12. If the server has started from the EXPRESSBUILDER DVD, insert the EXPRESSBUILDER disk into the optical disk drive, and then click **OK**.

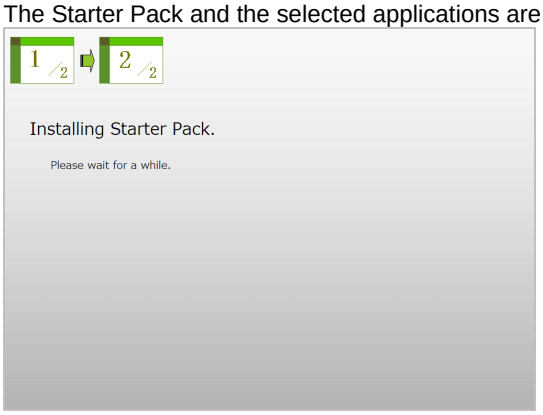


13. Insert the OS installation media into the optical disk drive, and then click **OK**.

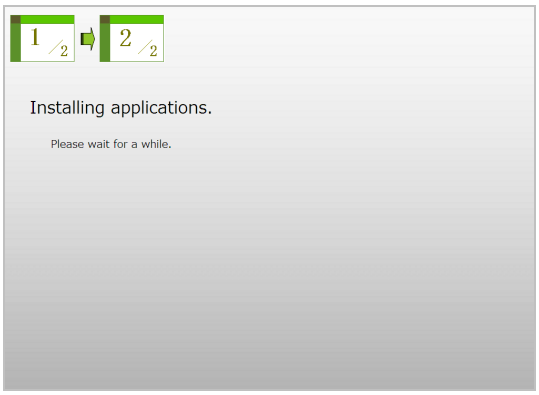


    Windows Server 2008 R2 is installed automatically.

14. The Starter Pack and the selected applications are automatically installed.

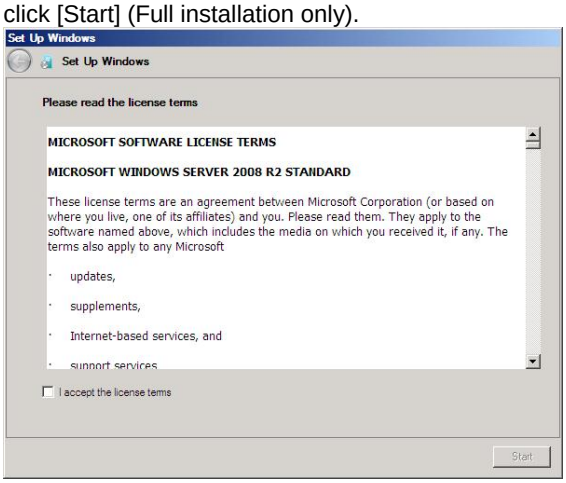


Screen displayed when Starter Pack is being installed



Screen displayed when an application is being installed

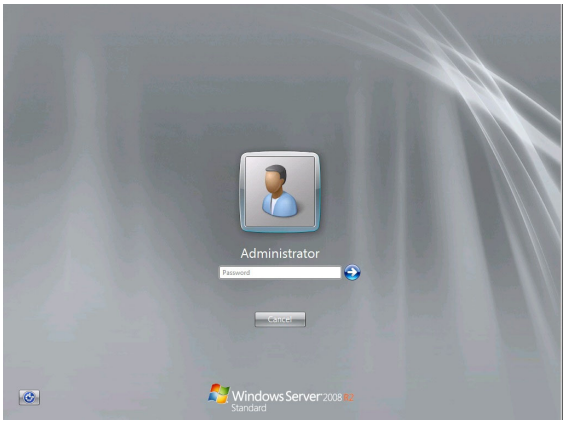
15. When the software license agreement window appears, select **I accept the license terms**, and then click [Start] (Full installation only).


Set Up Windows
Set Up Windows
Please read the license terms
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT WINDOWS SERVER 2008 R2 STANDARD
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft
updates,
supplements,
Internet-based services, and
support services
I accept the license terms
Start

16. When the following message appears, press <Ctrl> + <Alt> + <Del> keys.

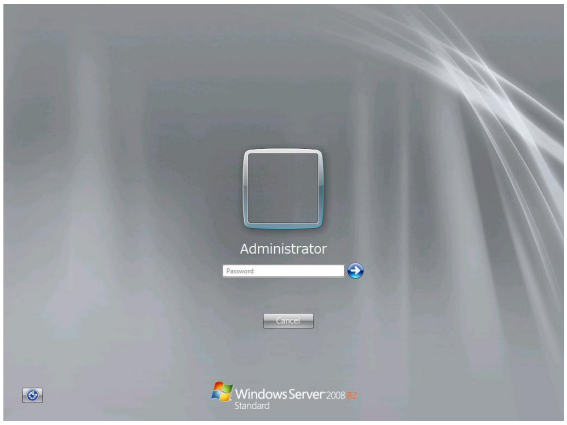
Full installations:

When the following screen appears, enter your password into the text box, and then click .

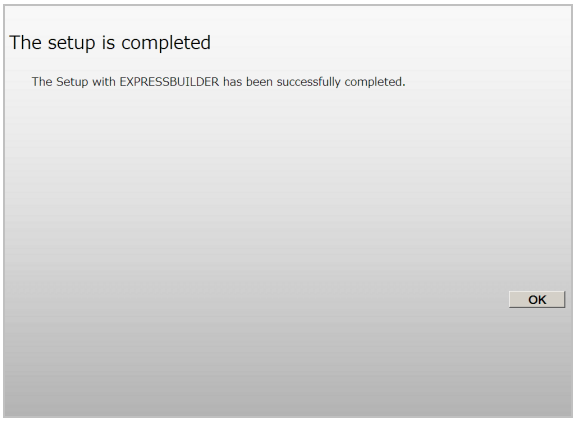


Server Core installations:

When the following screen appears, enter your password into the text box, and then click .



17. Click **OK.**



18. Follow the instructions described in *Chapter 1 (4.5 Setting Up Device Drivers)* to set up the device drivers.

19. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.

20. Apply Service Pack as needed according to *Chapter 1 (*4.7 Applying Service Pack*)*.

21. Execute setup by following the instructions described in *Chapter 1 (6. Setup for Solving Problems)*.

Setup with EXPRESSBUILDER is now complete.

4.3 Setup with Windows Standard Installer

This section describes how to install Windows with Windows Standard Installer.

This feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following " *User's Guide* ".

Important

Setup with Windows standard Installer may delete all data of the hard disk drive depending on the settings. Pay attention to input parameters. You must be especially careful when configuring the following:

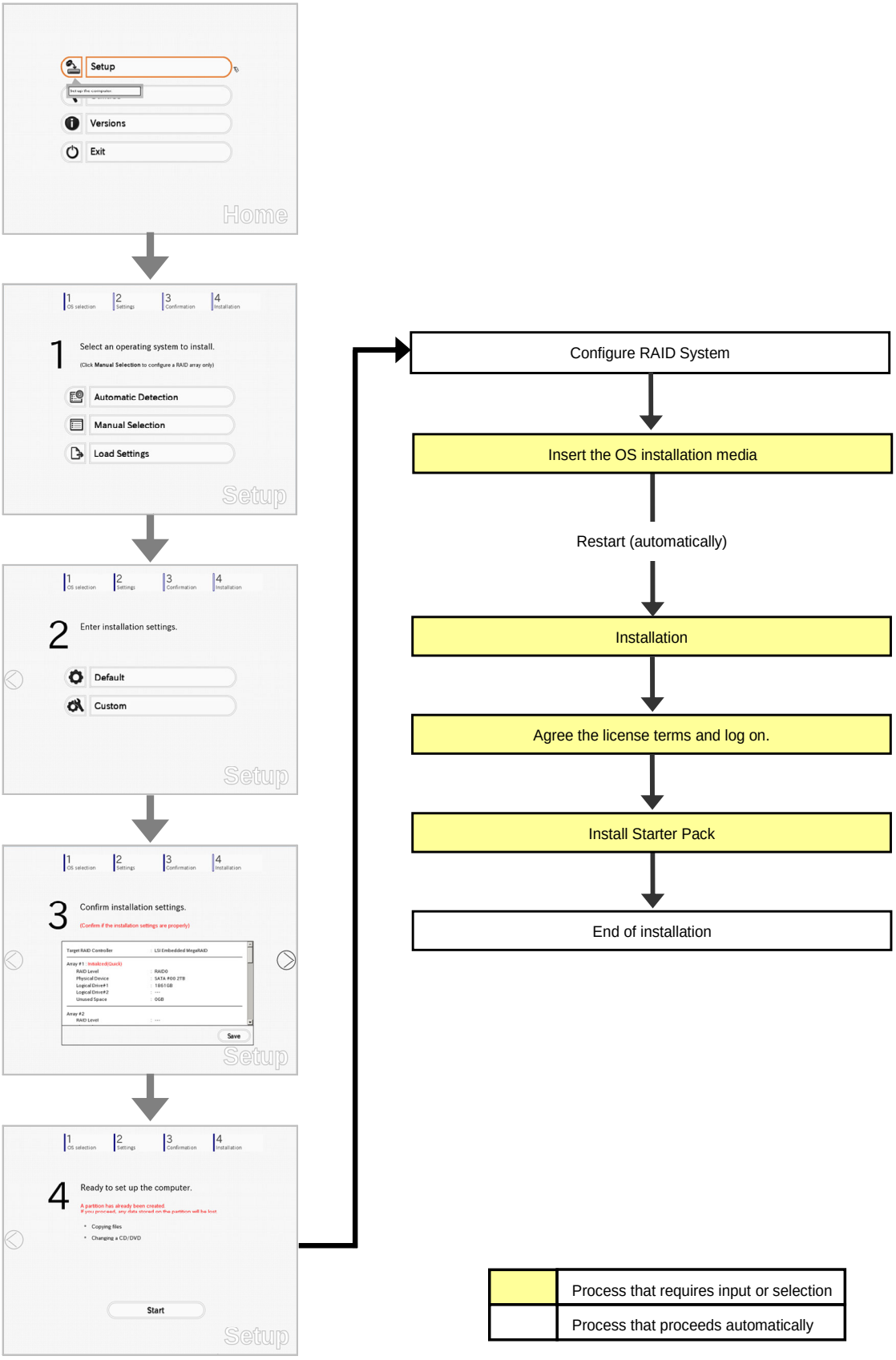
– RAID settings

Backing up user data, as needed, is recommended.

Tips

- Setup with Windows Standard Installer allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, refer to *7. Windows OS Parameter File*.

4.3.1 Setup flow



4.3.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

- Either of the following OS installation media
  - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
  - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2008 R2 DVD-ROM*)
- **First Steps Guide**
- Either of the following EXPRESSBUILDER
  - **EXPRESSBUILDER DVD**
  - **Internal Flash Memory** (optional)
- Prepare if needed:
  - **Removable media for Windows OS parameter file**
  - **Service Pack**
    (If the OS installation media contains Service Pack 1, you need not apply the service pack again.)

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory. EXPRESSBUILDER can be run from Internal Flash Memory if it is installed in the server.
- If you are using a server with Internal Flash Memory installed, you can install the OS without using the EXPRESSBUILDER DVD.

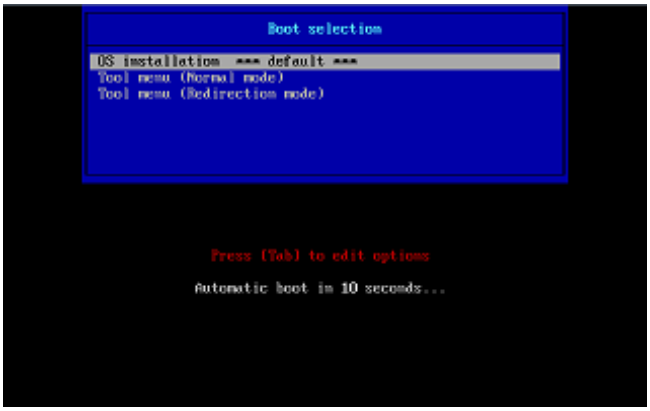
4.3.3 Setup procedure

Note Read through the items in *Chapter 1* (*4.1 Before Starting Setup*) prior to installing Windows.

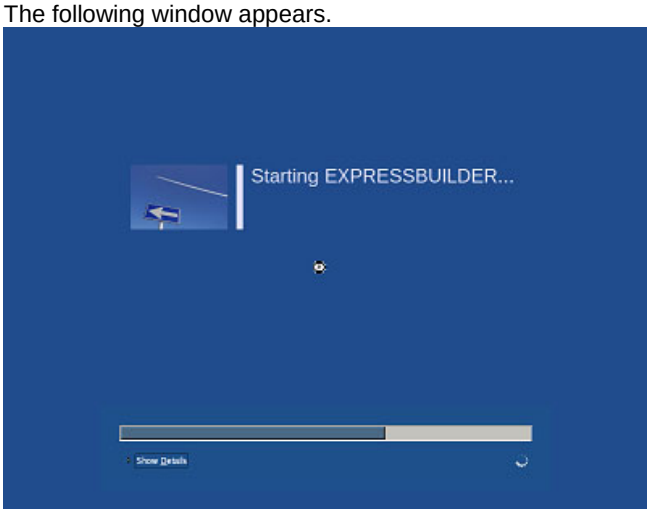
1. Turn peripheral device (such as a display) power on, and then turn the server power on.

2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.

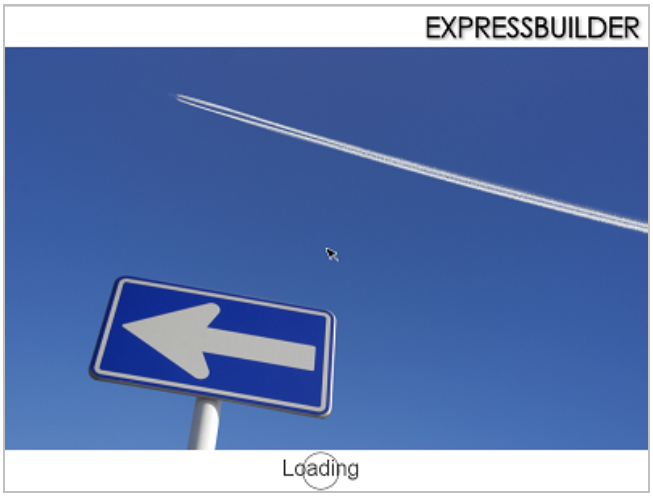
3. Select **Os installation *** default *****.
   You will automatically advance to step 4, with no need for further input.


Boot selection
OS installation *** default ***
Tool menu (Normal mode)
Tool menu (Redirection mode)
Press (Tab) to edit options
Automatic boot in 10 seconds...

The following window appears.

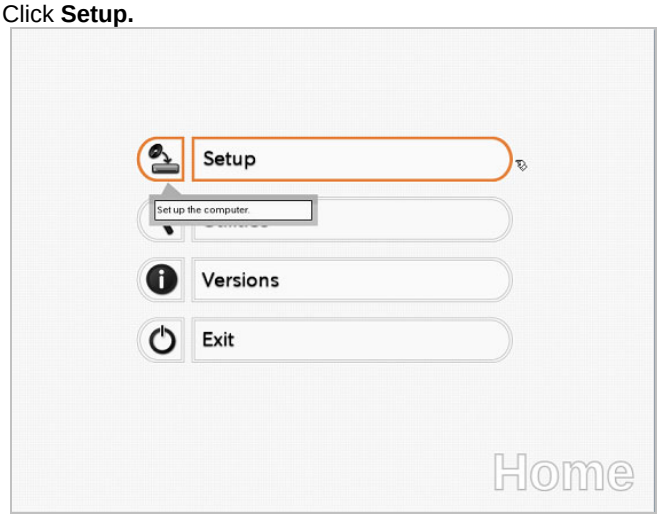


The server starts from EXPRESSBUILDER.



4. Select **English** on the language selection window, and then click [OK].

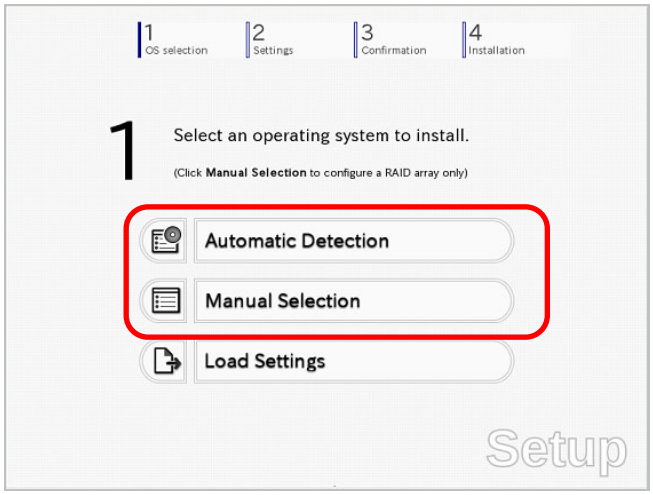
5. Click **Setup.**



6. On the **OS selection** menu, select the OS to install or specify the parameter file.
   - ☐ When not using parameter file : Go to Step 7.
   - ☐ When using a parameter file : Go to Step 8.

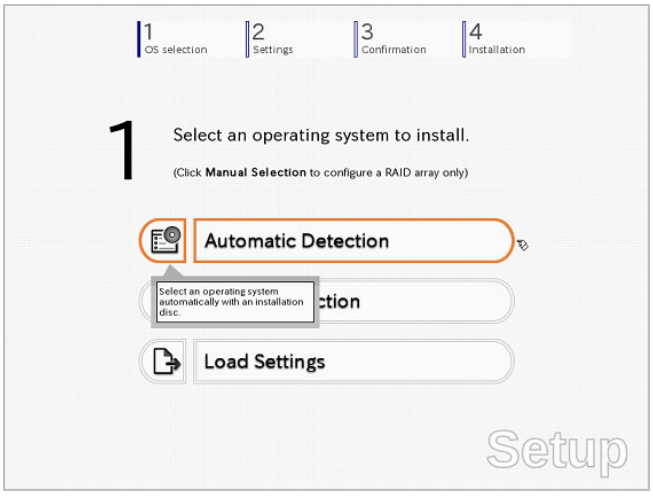
Note When setting up again, parameter input via the wizard can be omitted by loading the saved parameter file.

7. When *not using* a parameter file, select an OS by either of the following two ways:

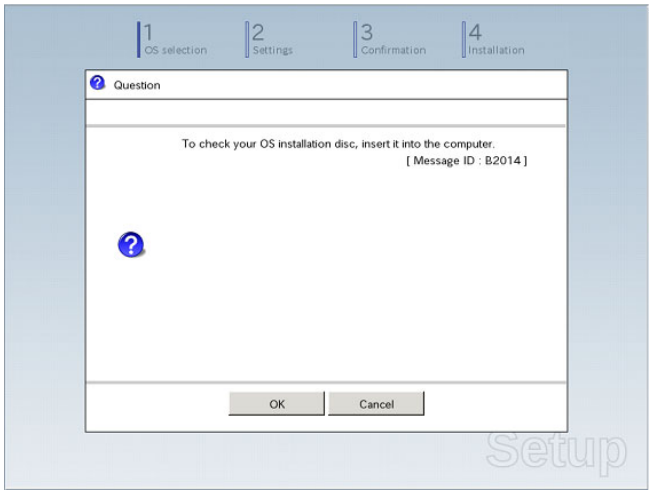


To automatically detect the OS on the OS installation media:

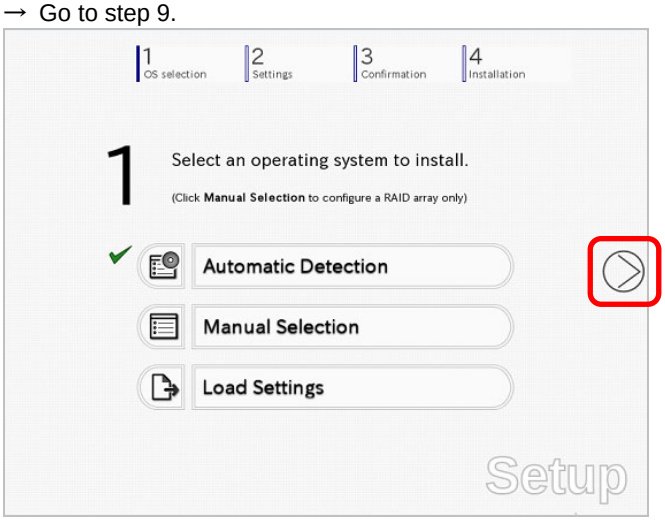
(1) Click **Automatic Detection**.



Insert the OS installation media, and then click **OK**.

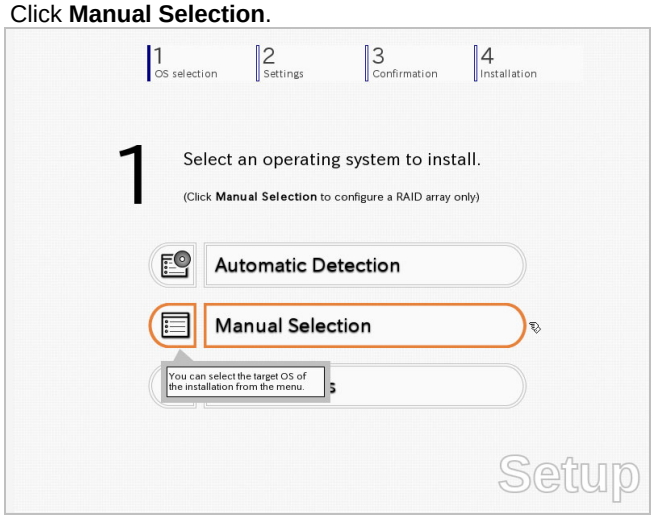


(2) Click ⊳ on the right side of the screen.
→ Go to step 9.



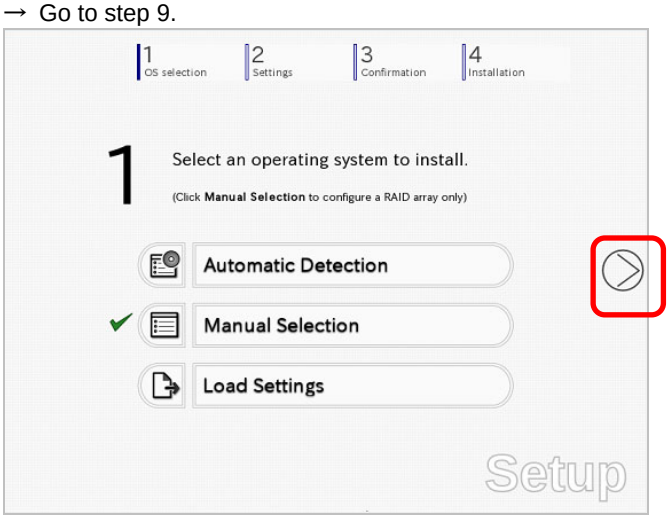
To select an OS from the menu:

(1) Click **Manual Selection**.

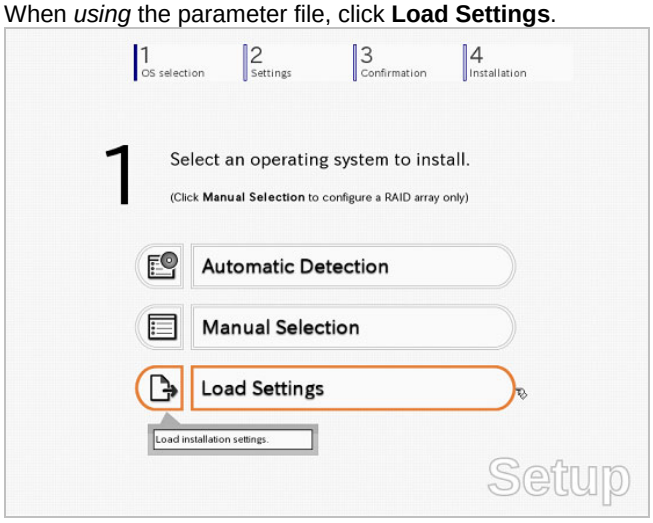


(2) From the **Windows** list, select **Windows Server 2008 R2**, and then click **OK**.

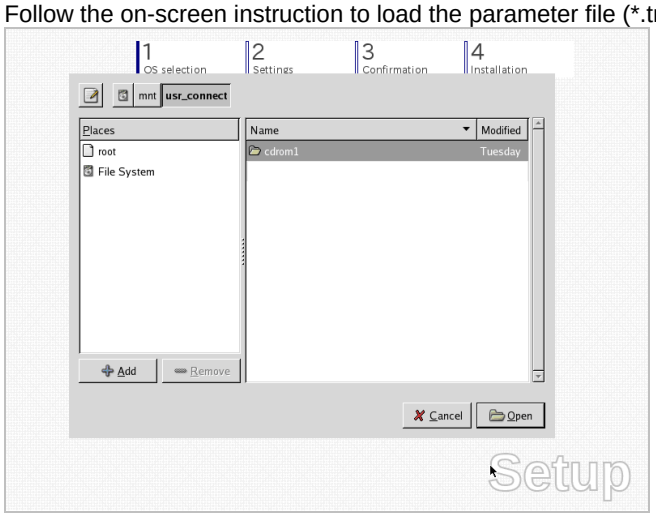
(3) Click ▷ on the right side of the screen.
→ Go to step 9.



8. When *using* the parameter file, click **Load Settings**.



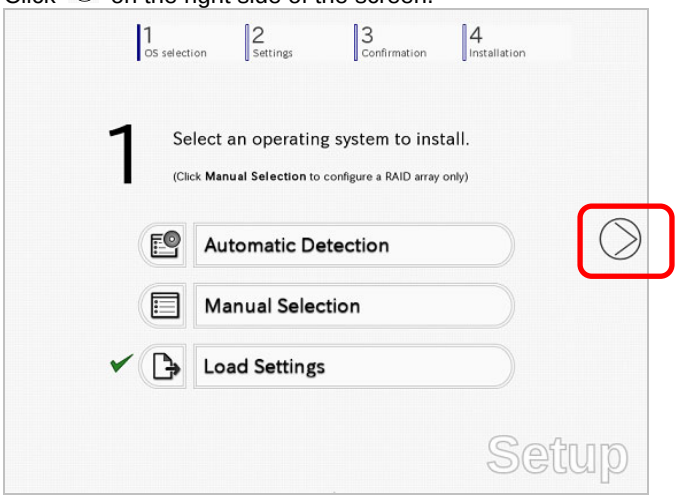
Follow the on-screen instruction to load the parameter file (*.tre).



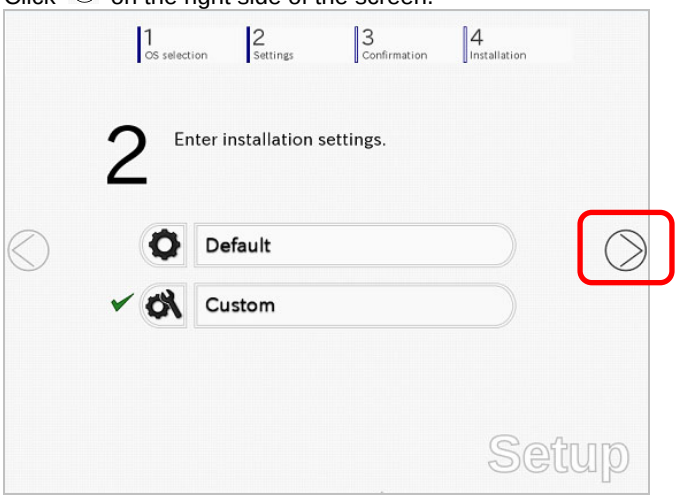
Tips

For the removable media in which the parameter file is saved, see "**/mnt/usr_connect/usb***" (* indicates a number).

Click ⊘ on the right side of the screen.

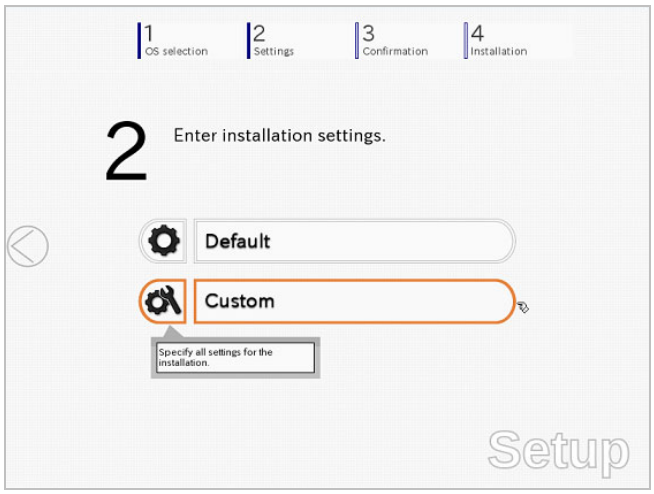


When the parameter file is correctly loaded, the setting is determined.
Click **Custom** to check and modify the setting in the wizard.
Click ⊘ on the right side of the screen.

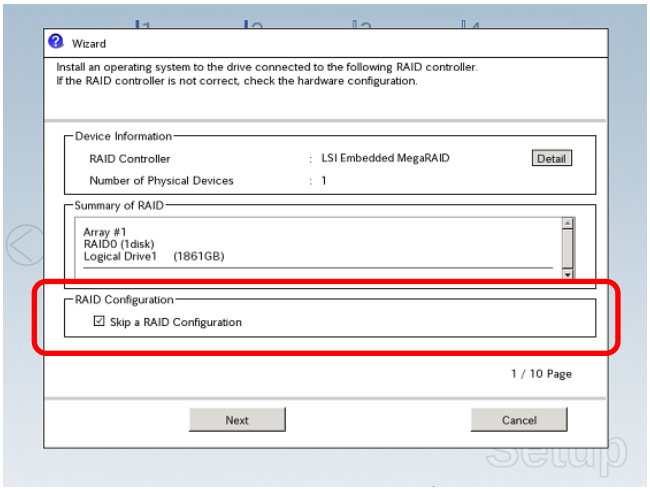


→ Go to step 10.

9. Click **Custom.**



(1) Use this menu to configure the RAID system with the RAID controller detected automatically.



When creating new logical drives

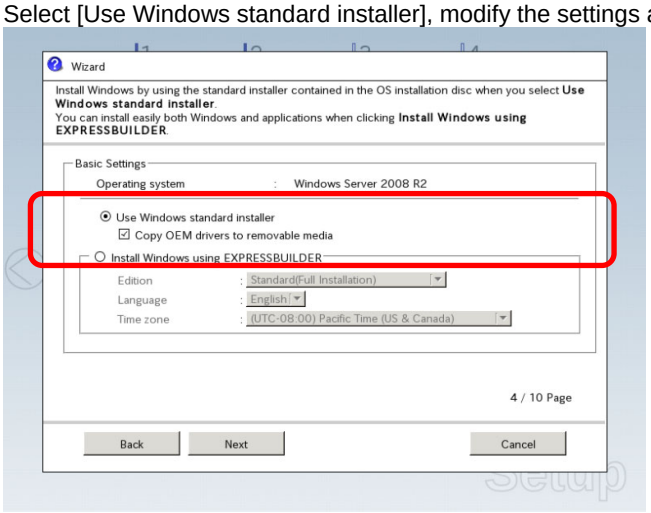
With the **Skip a RAID Configuration** check box cleared, click **Next**. Set up the logical drives according to the wizard.

Important **If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.**

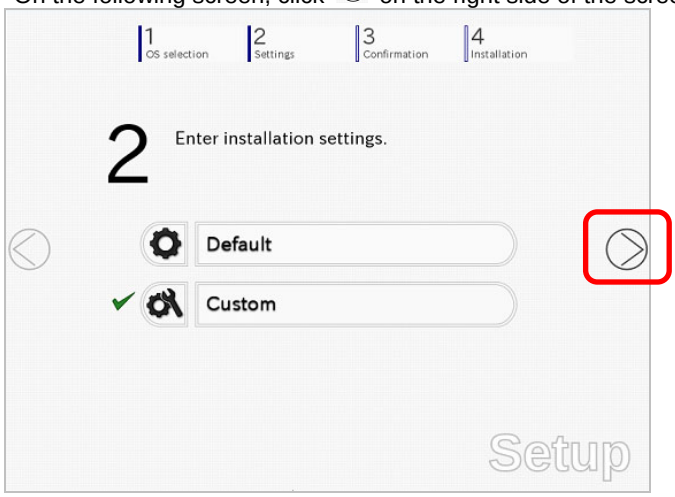
When skipping the creation of new logical drives

Select the **Skip a RAID Configuration** check box, and then click **Next**.

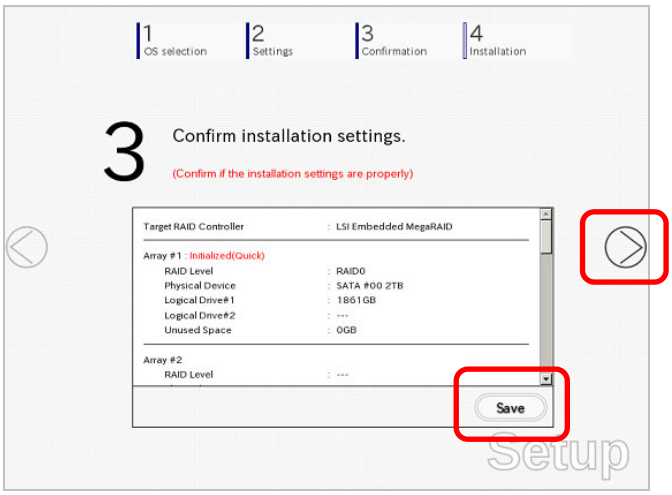
(2) Check the settings specified for **Basic Settings**.
Select [Use Windows standard installer], modify the settings as needed, and then click **Next**.


Wizard
Install Windows by using the standard installer contained in the OS installation disc when you select Use Windows standard installer.
You can install easily both Windows and applications when clicking Install Windows using EXPRESSBUILDER.
Basic Settings
Operating system : Windows Server 2008 R2
Use Windows standard installer
Copy OEM drivers to removable media
Install Windows using EXPRESSBUILDER
Edition : Standard(Full Installation)
Language : English
Time zone : (UTC-08:00) Pacific Time (US & Canada)
4 / 10 Page
Back
Next
Cancel

(3) On the following screen, click ▷ on the right side of the screen.

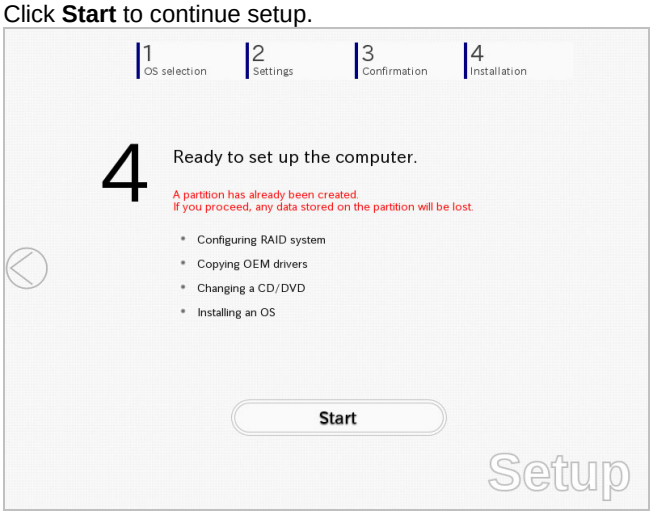


10. Check the parameter settings.
To save the settings, click **Save**.



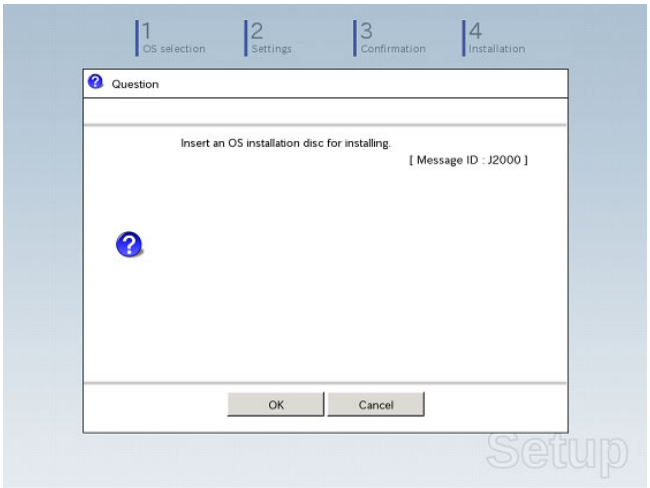
Click ▷ on the right side of the screen.

11. The setup process starts.
Click **Start** to continue setup.



If you need to suspend setup due to reasons such as backing up data, restart the setup process from the beginning.

12. When the following screen appears, insert the OS installation media into the disk drive, and then click **OK**.



13. The server reboots automatically.
    If you use Internal Flash Memory, press <F3> key when the following message appears during POST.

```
Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network
```

Note Since the OS installation media is set in the optical disk drive in Step 12, boot the system from the optical disk drive having higher boot priority, not from Internal Flash Memory.

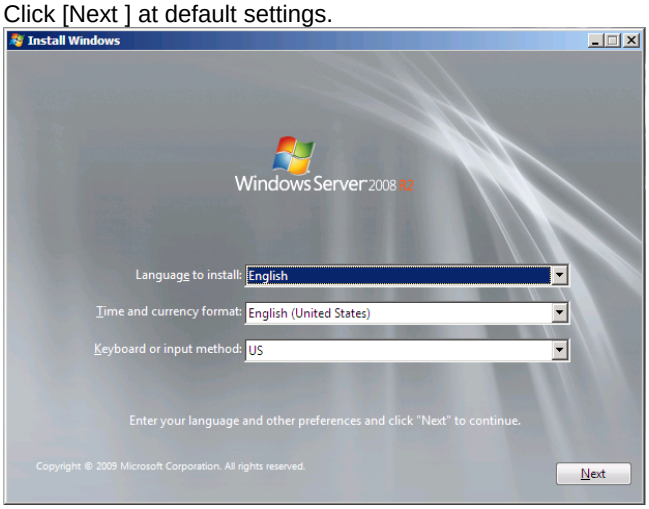
14. Run from the OS installation media.
    If a bootable operating system is already installed on the hard disk drive, press <Enter> key while the message “Press any key to boot from CD or DVD…” is displayed on the top of the screen.

    The boot sequence proceeds and the message “Windows is loading files…” appears.

Note If “Windows is loading files...” message does not appear, <Enter> key was not pressed correctly. Reboot and retry.

    This step is unnecessary if no bootable operating system exists.

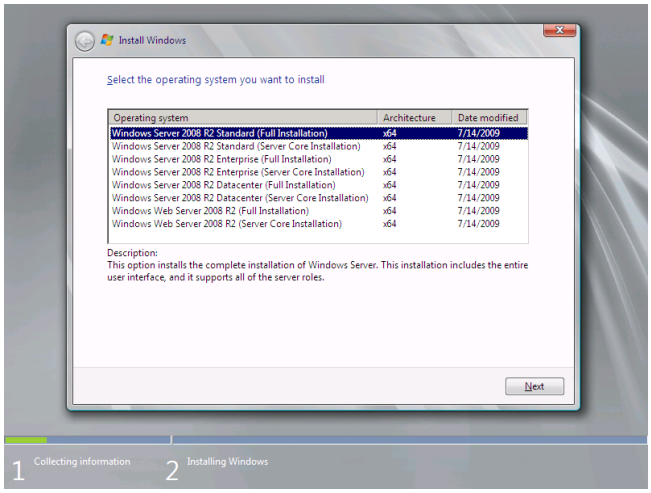
15. Click [Next] at default settings.


Install Windows
Windows Server 2008 R2
Language to install: English
Time and currency format: English (United States)
Keyboard or input method: US
Enter your language and other preferences and click "Next" to continue.
Copyright © 2009 Microsoft Corporation. All rights reserved.
Next

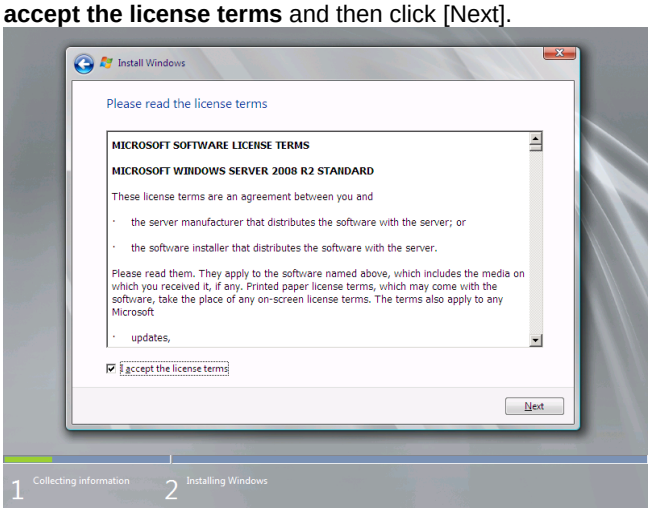
16. Click [Install Now].
Windows Server 2008 R2 installation starts.

Install Windows
Windows Server 2008 R2
Install now
What to know before installing Windows
Repair your computer
Copyright © 2009 Microsoft Corporation. All rights reserved.

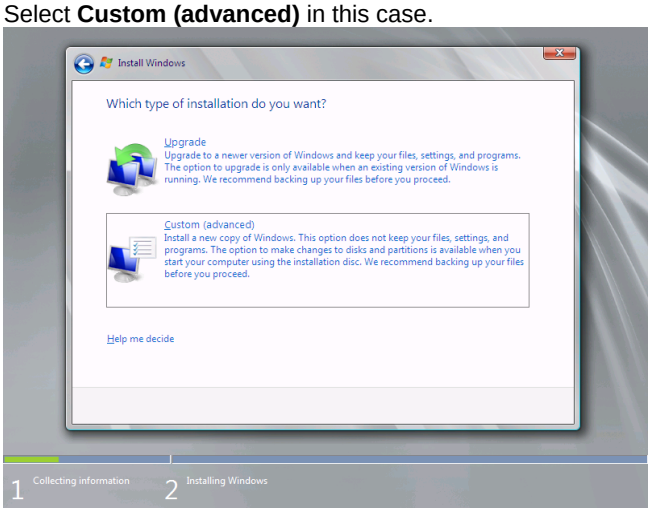
17. Select the edition of the Windows you purchased and the installation method.
The screen display differs depending on an OS installation media you are using.


Install Windows
Select the operating system you want to install
Operating system
Architecture
Date modified
Windows Server 2008 R2 Standard (Full Installation) x64 7/14/2009
Windows Server 2008 R2 Standard (Server Core Installation) x64 7/14/2009
Windows Server 2008 R2 Enterprise (Full Installation) x64 7/14/2009
Windows Server 2008 R2 Enterprise (Server Core Installation) x64 7/14/2009
Windows Server 2008 R2 Datacenter (Full Installation) x64 7/14/2009
Windows Server 2008 R2 Datacenter (Server Core Installation) x64 7/14/2009
Windows Web Server 2008 R2 (Full Installation) x64 7/14/2009
Windows Web Server 2008 R2 (Server Core Installation) x64 7/14/2009
Description:
This option installs the complete installation of Windows Server. This installation includes the entire user interface, and it supports all of the server roles.
Next
1 Collecting information
2 Installing Windows

18. When the following window appears, confirm the content of the license agreement. If you agree, select **I accept the license terms** and then click [Next].


Install Windows
Please read the license terms
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT WINDOWS SERVER 2008 R2 STANDARD
These license terms are an agreement between you and
the server manufacturer that distributes the software with the server; or
the software installer that distributes the software with the server.
Please read them. They apply to the software named above, which includes the media on which you received it, if any. Printed paper license terms, which may come with the software, take the place of any on-screen license terms. The terms also apply to any Microsoft
updates,
I accept the license terms
Next
1 Collecting information
2 Installing Windows

19. When the following message appears, select the installation type.
Select **Custom (advanced)** in this case.


Install Windows
Which type of installation do you want?
Upgrade
Upgrade to a newer version of Windows and keep your files, settings, and programs. The option to upgrade is only available when an existing version of Windows is running. We recommend backing up your files before you proceed.
Custom (advanced)
Install a new copy of Windows. This option does not keep your files, settings, and programs. The option to make changes to disks and partitions is available when you start your computer using the installation disc. We recommend backing up your files before you proceed.
Help me decide
1 Collecting information
2 Installing Windows

20. "Where do you want to install Windows?" window appears.

Note If not using a RAID Controller, go to step 24.

Click **Load Driver**.

If the following message appears, replace the OS installation media and EXPRESSBUILDER DVD in the optical disk drive, and then click [Browse]. Next, go to step 21.

```
Load Driver
To install the driver needed to access your hard drive, insert
the installation media containing the driver files, and then
click OK.

Note: The installation media can be a floppy disk, CD, DVD, or
USB flash drive.

        Browse          OK          Cancel
```

Tips

- If using Internal Flash Memory, you do not need to remove the OS installation media.
- At this time, the message "The Installation media can be a floppy disk, CD, DVD, or USB flash drive." appears on the screen, use the supplied EXPRESSBUILDER DVD or Internal Flash Memory.

21. Specify the following locations, and then click [OK].
(When using EXPRESSBUILDER, select the optical disk drive. When using Internal Flash Memory, select the volume of INTER-FLASH.)

When using the N8103-172/173/174 RAID Controller:
\002\win\winnt\oemfd\ws2008r2\megasas2

When using the N8103-168 RAID Controller:
\002\win\winnt\oemfd\ws2008r2\megasas2

22. Select the necessary driver from the driver list shown, and then click [Next].

When using the N8103-172/173/174 RAID Controller:
[**LSI MegaRAID SAS 9272-8i**]

When using the N8103-168 RAID Controller:
[**LSI MegaRAID SAS 9265CV-8i**]

Tips

When N8103-168 is used, the name of the RAID controller that appears on a screen is different from one that is showed on WebBIOS and Universal RAID Utility. But it is not a problem.

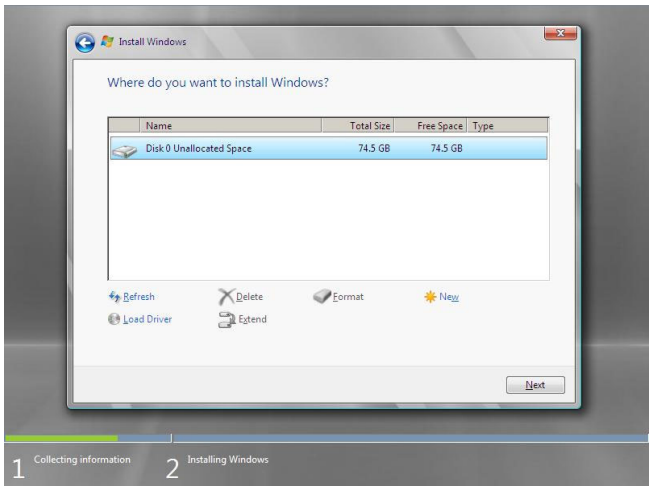
23. If you used EXPRESSBUILDER DVD, remove it and then insert the OS installation media.

Tips

If you have not replaced the OS installation media after loading the driver, the following message may appear.

If it appears, replace the OS installation media, and then click [Refresh].

24. When the following window appears, select the disk in which the partition will be created, and then click **Drive options (advanced)**.
If a partition has already been created, go to step 27.



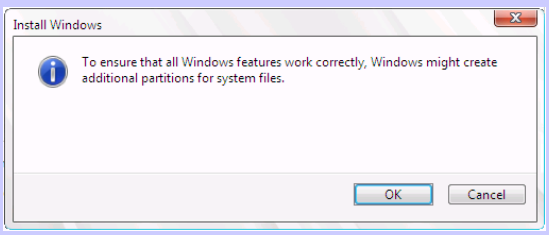
25. Click [New], enter the partition size into the size input box, and then click [Apply].

Note

When installing the OS to a disk of over 2,097,152 MB (2 TB), the partition size can only be set to 2,097,152 MB or less.

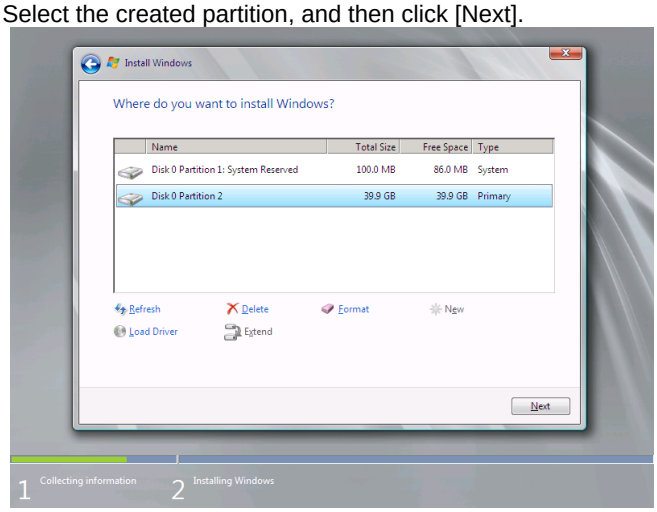
Tips

When creating a new partition and installing the OS, a 100 MB boot partition is created. When the following window appears, click [OK].


Install Windows
To ensure that all Windows features work correctly, Windows might create additional partitions for system files.
OK
Cancel

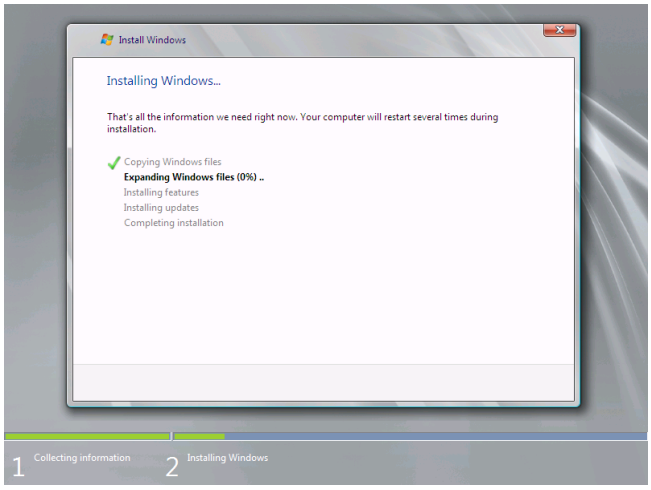
26. Select the partition created in step 25, and then click [Format].

27. Select the created partition, and then click [Next].



Tips The number of partitions displayed differs depending on the hardware configuration.

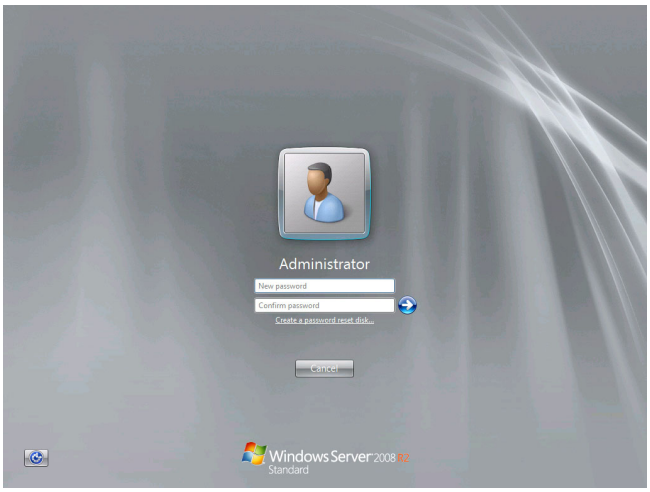
When the following message appears, Windows installation starts automatically.


Install Windows
Installing Windows...
That's all the information we need right now. Your computer will restart several times during installation.
Copying Windows files
Expanding Windows files (0%) ..
Installing features
Installing updates
Completing installation
1 Collecting information
2 Installing Windows

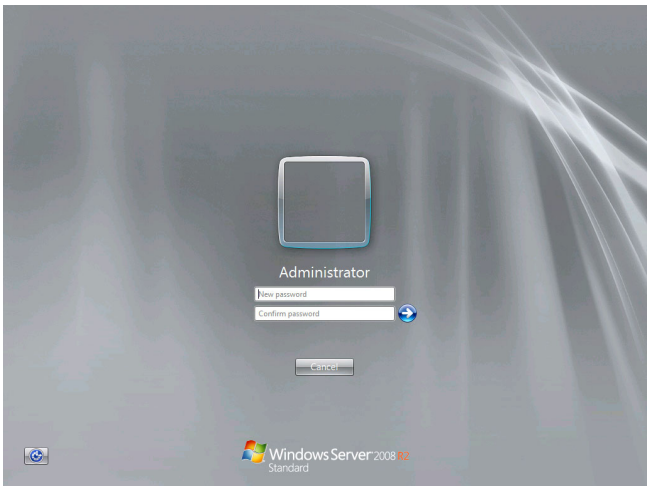
28. After a full installation of Windows Server 2008 R2 is completed, the following window appears, prompting you to change your password before logging on. Click [OK].

29. Change your password, and then click the [ ] button.

Full installations:



Server Core installations:

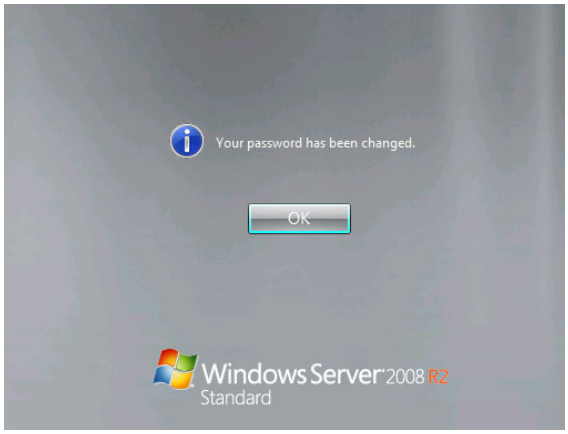


Tips

Passwords must fulfill the following requirements in Windows Server 2008 R2.

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

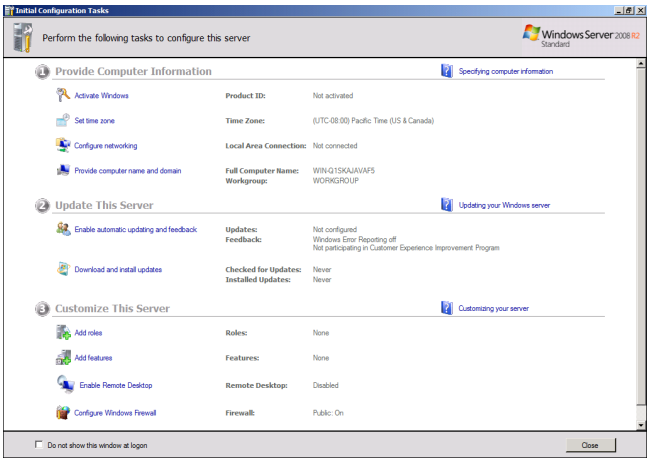
30. Click **OK**.



31. Confirm the following according to the settings selected (displayed) in Step 17.

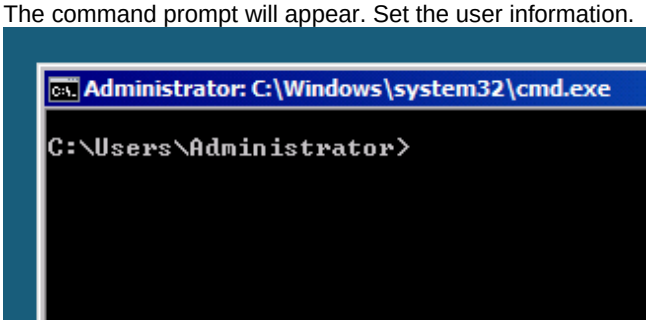
Full installations:

When the Initial Configuration Tasks window appears after you log on, enter the user information.



Server Core installations:

The command prompt will appear. Set the user information.



Tips For detailed setup procedures, refer to the Microsoft "*Step by Step Guide*".

32. Install Starter Pack by referring to *Chapter 1* (*4.4 Installing Starter Pack)*.

33. Install drivers and specify detailed settings by referring to *Chapter 1 (4.5 Setting Up Device Drivers)*.

34. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.

35. Apply Service Pack as needed according to *Chapter 1 (4.7 Applying Service Pack*).

36. Install the applications as needed by referring to *Chapter 1* (*4.8 Installing the Applications*).

37. Execute setup by following the instructions described in *Chapter 1 (6. Setup for Solving Problems).*

Setup with Windows standard installer is now complete.

4.4 Installing Starter Pack

Starter Pack contains drivers customized for this server. Be sure to apply Starter Pack before running the system.

Important

Also install Starter Pack in the following cases.

- **The system configurations have changed**
  (If an internal optional device is installed or removed, apply the Starter Pack. If a dialog box prompting system reboot is displayed, reboot the system according to the on-screen instructions, and then apply the Starter Pack.)
- **If the system was restored using a restore process**
- **If a system has been restored using the backup tool**

Note

The Scalable Networking Pack (SNP) function is disabled upon Starter Pack installation is complete.
The setting of SNP function may affect the system performance.

Tips

If the OS is installed by using EXPRESSBUILDER, Starter Pack is already applied. If the configuration is not changed, you do not need to apply Starter Pack again.

4.4.1 When using EXPRESSBUILDER DVD

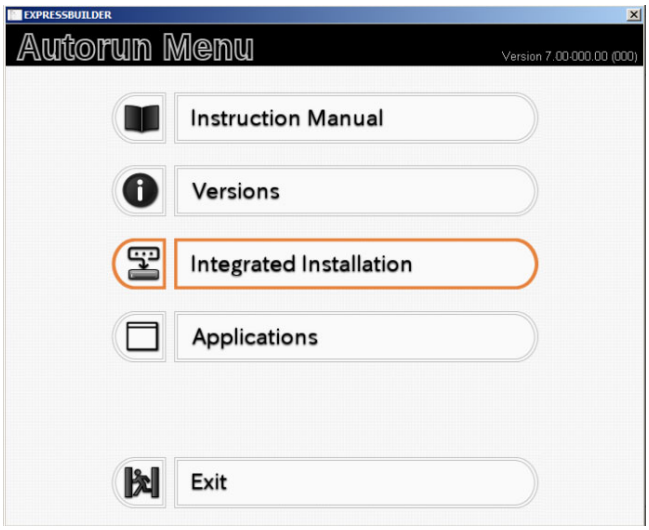
1. Log on to the system with the built-in administrator, which has administrative privileges.

2. Insert EXPRESSBUILDER DVD into the optical disk drive.

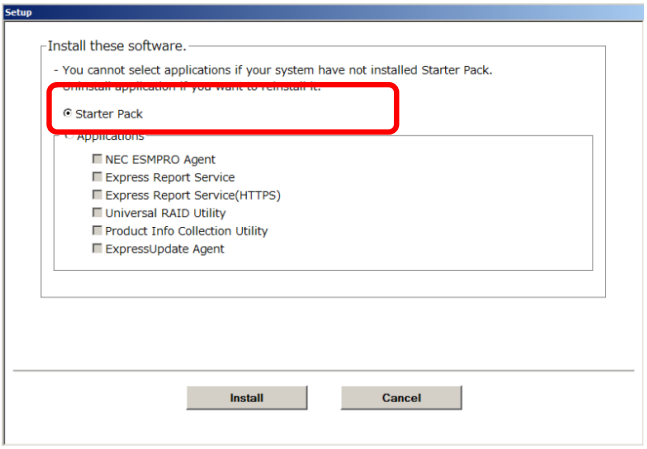
3. Start the installer of Starter Pack according to the installation type.

   Full installations

   Click **Integrated Installation** on the menu.



When the following screen appears, make sure that the **Starter Pack** option is selected, and then click **Install**.



Tips If Starter Pack is already installed, the **Applications** option is selected by default. To install Starter Pack again, select the **Starter Pack** option.

Server Core installations

(1) From the command prompt, type the following command. (In the example below, the optical disk drive is D drive.)

```
Cd /d D:\002\win\winnt\bin
```

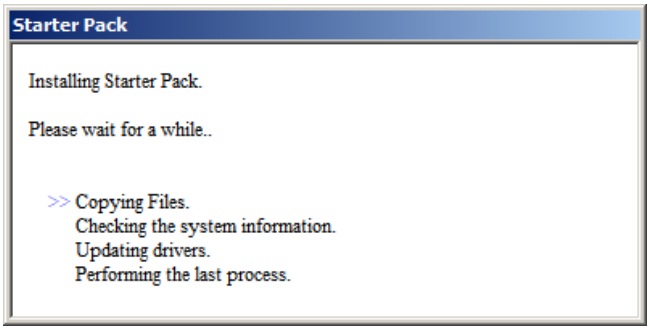
```
C:\Users\administrator>cd /d D:\002\win\winnt\bin
```

(2) Enter the following, and then press <Enter> key.

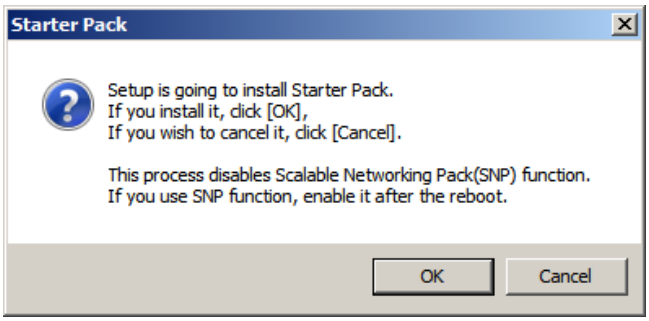
```
Pkgsetup.vbs
```

```
D:\002\win\winnt\bin>pkgsetup.vbs
```

Wait for several minutes without attempting any further operation until the following window appears. On Full Installation, the following progress message appears while the Starter Pack is installed.

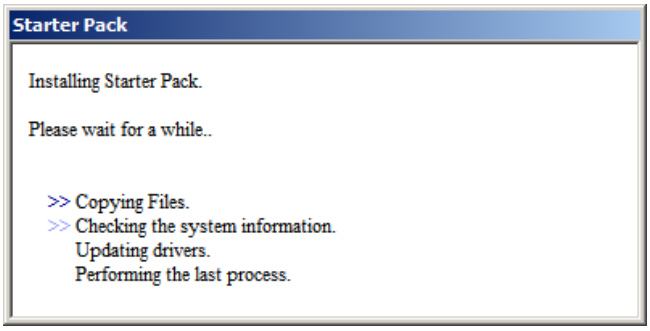


4. Read the message, and then click [OK].
   Starter Pack installation starts.

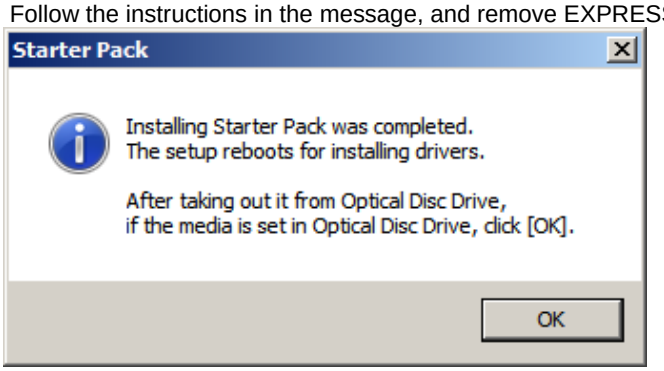

Starter Pack
Setup is going to install Starter Pack.
If you install it, click [OK],
If you wish to cancel it, click [Cancel].
This process disables Scalable Networking Pack(SNP) function.
If you use SNP function, enable it after the reboot.
OK
Cancel

   Wait until installation completes (about 3 to 4 minutes).

   On Full Installation, the following progress message appears while the Starter Pack is installed.



5. When the following message appears, Starter Pack installation is complete.
   Follow the instructions in the message, and remove EXPRESSBUILDER DVD.


Starter Pack
Installing Starter Pack was completed.
The setup reboots for installing drivers.
After taking out it from Optical Disc Drive,
if the media is set in Optical Disc Drive, click [OK].
OK

6. Click [OK] and then restart the system.

   Installation of Starter Pack is now complete.

4.4.2 When using Internal Flash Memory

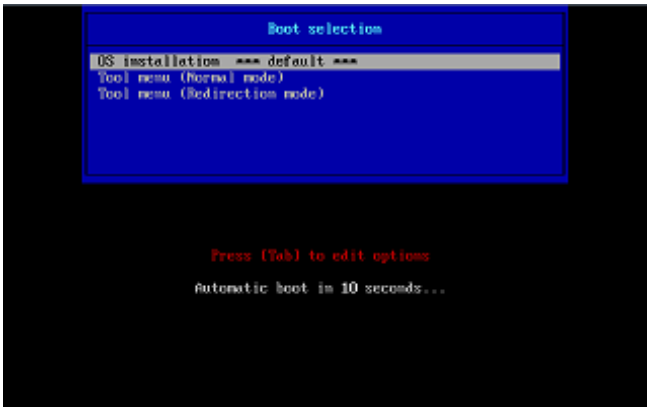
(Optional " Internal Flash Memory " is required)

1. After installing the operating system, restart the server.

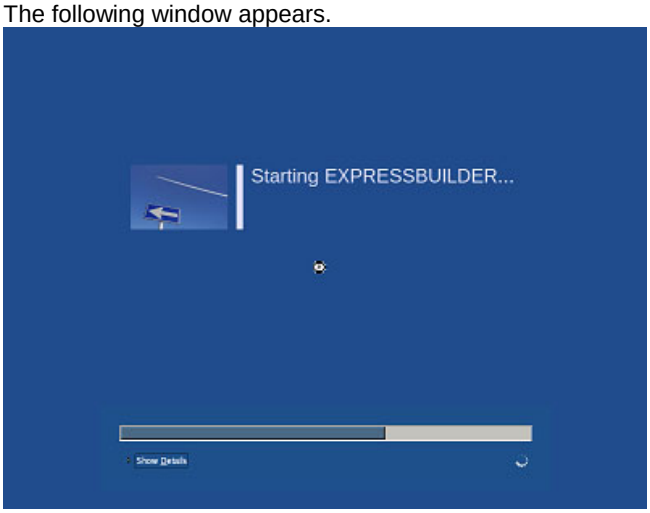
2. When “Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network” appears during POST, press <F3> key.

Note At this time, be sure to remove the DVD from the optical disk drive.

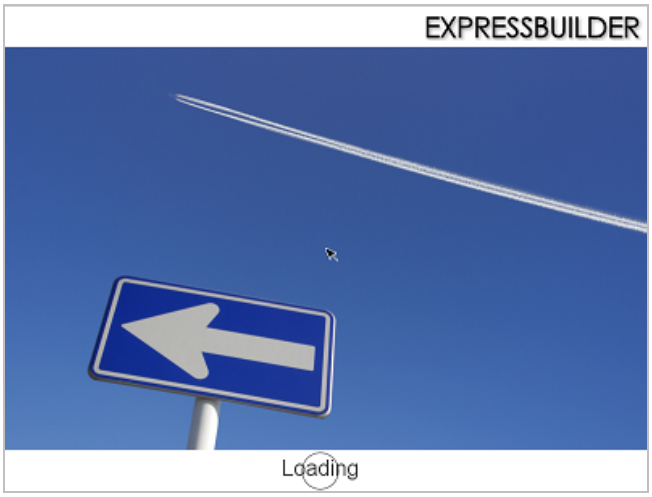
3. When the following message appears, select **Os installation *** default ***.**
You will automatically advance to the next window, with no need for further input.


Boot selection
OS installation *** default ***
Tool menu (Normal mode)
Tool menu (Redirection mode)
Press (Tab) to edit options
Automatic boot in 10 seconds...

The following window appears.



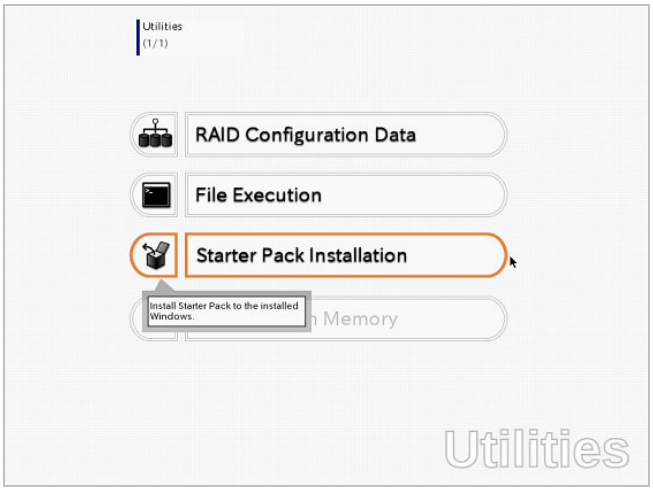
The server starts from EXPRESSBUILDER.



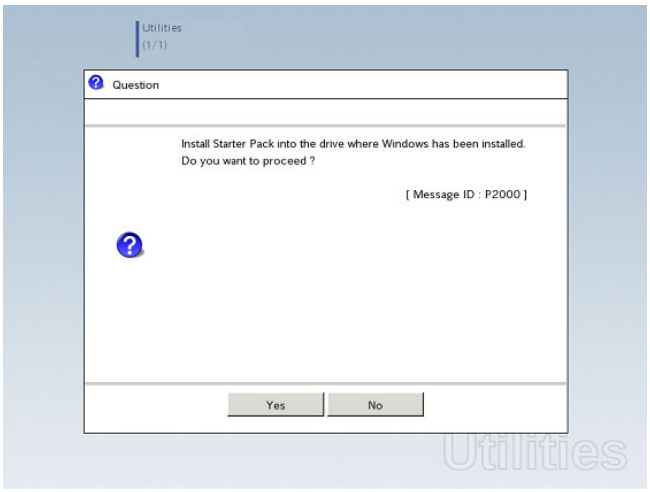
4. Select **English** on the language selection window, and then click [OK].

5. Click **Utilities**.

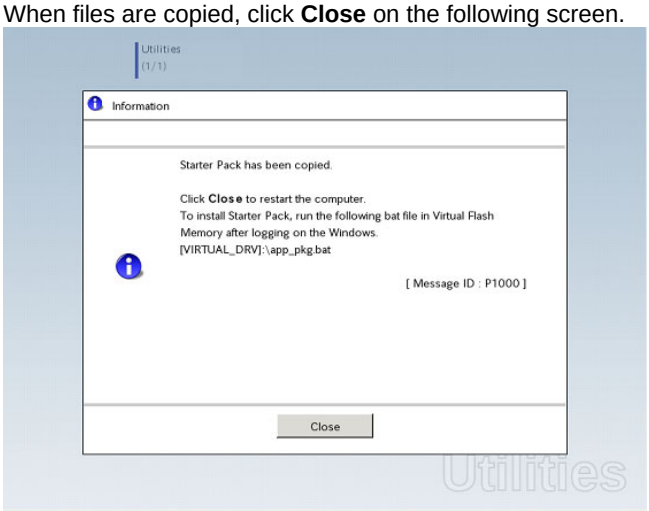
6. Click **Starter Pack Installation**.



7. Read the contents, and then click **Yes**.



8. When files are copied, click **Close** on the following screen.


Utilities
(1/1)
Information
Starter Pack has been copied.
Click Close to restart the computer.
To install Starter Pack, run the following bat file in Virtual Flash Memory after logging on the Windows.
[VIRTUAL_DRV]:\app_pkg.bat
[Message ID : P1000]
Close
Utilities

The server then restarts.

Note You do not need to press <F3> key at this time.

9. Proceed application step according to the installation type.

Tips During setup, a virtual floppy disk drive is temporarily connected. Follow the instructions below to reference the virtual floppy disk drive.

Full installations

Click **app_pkg.bat** of Floppy disk drive (usually A drive).

Server Core installations

(1) Enter the following command at the command prompt, and then specify the drive letter of Floppy disk drive (usually A drive).

Cd /d A:

```
C:\Users\administrator>cd /d A:\
```

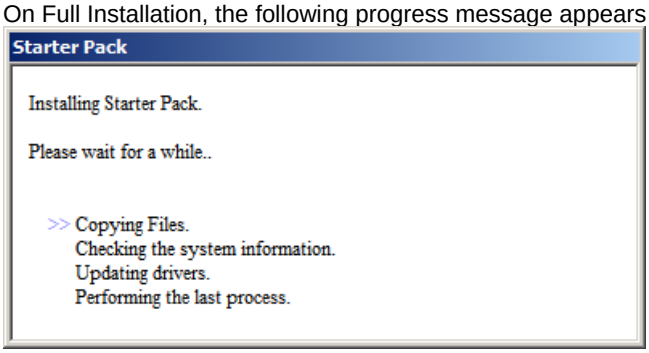
(2) Enter the following, and then press <Enter> key.

app_pkg.bat

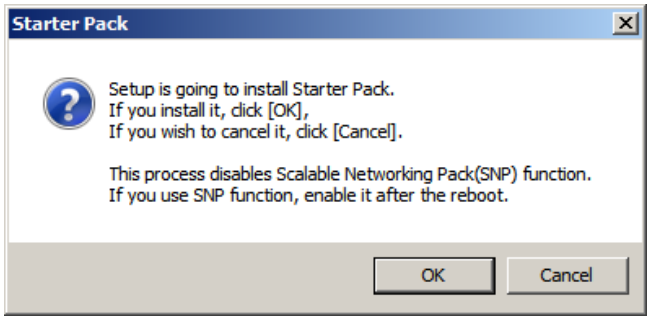
```
A:\>app_pkg.bat
```

Wait until the file copy is complete. (About 1-3minute(s).

On Full Installation, the following progress message appears while the Starter Pack is installed.

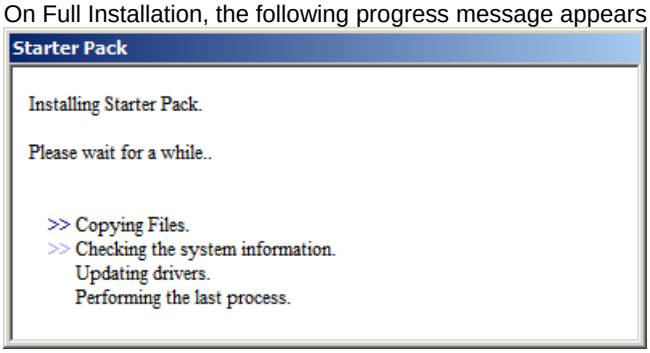


10. Read the message, and then click [OK].
Starter Pack installation starts.

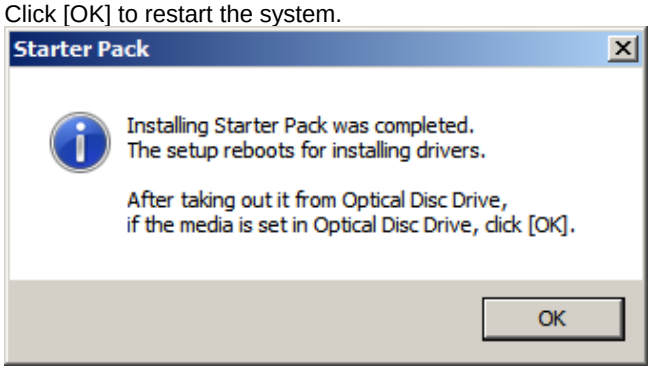

Starter Pack
Setup is going to install Starter Pack.
If you install it, click [OK],
If you wish to cancel it, click [Cancel].
This process disables Scalable Networking Pack(SNP) function.
If you use SNP function, enable it after the reboot.
OK
Cancel

Wait until the installation of the Starter Pack is complete. (About 3-5 minutes)

On Full Installation, the following progress message appears while the Starter Pack is installed.



11. Click [OK] to restart the system.


Starter Pack
Installing Starter Pack was completed.
The setup reboots for installing drivers.
After taking out it from Optical Disc Drive,
if the media is set in Optical Disc Drive, click [OK].
OK

Installation of Starter Pack is now complete.

4.5 Setting Up Device Drivers

Install and set up device drivers provided for the standard configuration.

For details regarding the installation and setup of a driver for an optional device, refer to the manual supplied with the optional device.

4.5.1 Installing the LAN drivers and BACS (teaming utility)

(1) LAN drivers and BACS

If EXPRESSBUILDER is used for setup, the LAN drivers and BACS will automatically be installed.
If the Windows standard installer is used for setup, install Starter Pack to install the LAN driver and BACS.

Important **WOL is supported by the standard network adapters only.**

Note

- To change the LAN driver and BACS settings, log on to the system from a local console using an administrator's account. Remotely changing the settings by using the operating system's remote desktop feature is not supported.
- Be sure to select the **Internet Protocol (TCP/IP)** check box when specifying an IP address.

(2) Optional LAN board

This server supports the following optional LAN boards.

Optional LAN boards: N8104-128/132/133/138/145

The drivers for LAN boards are automatically installed using the OS plug-and-play function.

The LAN driver is not installed if N8104-145 is not installed at the time of installation of the OS by using EXPRESSBUILDER or at installation of Starter Pack, or on a pre-installation model.

Perform the steps below to install the N8104-145 LAN driver manually.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.

   If Autorun Menu appears, close the menu.

   Tips EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

2. Open Command Prompt, and execute `install.bat` in the following folder.

   When using EXPRESSBUILDER DVD:

   EXPRESSBUILDER DVD:\002\win\winnt\WS2008x64\r2\lan\intel

   If Starter Pack was installed from Internal Flash Memory:

   System Drive:\StartPKG\WS2008x64\r2\lan\intel

3. When the following message appears, remove the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Installation Completed.

Setup is now completed.

Note

- If the LAN driver has been installed in N8104-145, PROSet (Teaming utility) is also installed.
- Using an optional LAN board, perform procedure "4.5.2 Setting up LAN drivers" for each optional LAN board.

(3) Network adapter name

After installing the LAN drivers, the following network adapter names will be displayed by the Device Manager or BACS.

Network adapters for the standard configuration
Broadcom NetXtreme Gigabit Ethernet #xx*

If connecting with an optional LAN board:
[N8104-128] Broadcom BCM57711 NetXtreme II 10 GigE (NDIS VBD Client) #xx*
[N8104-132/133/138] Broadcom NetXtreme Gigabit Ethernet #xx*
[N8104-145] Intel(R) Ethernet Server Adapter I340-T2 #xx*

* If there are adapters with the same name, a different identification number will be assigned to *xx*.

Tips

The ID for N8104-128 might be a number of two or more digits. This is due to the LAN driver specifications and not an error. This number cannot be changed.

4.5.2 Setting up LAN drivers

(1) Setting link speed

The transfer rate and duplex mode of the network adapter must be the same as those of the switching hub. Follow the procedure below to specify the transfer rate and duplex mode.

1. Open the **Device Manager**.
2. Expand **Network Adapters**, and then double-click the name of the network adapter you want to set. The properties of the network adapter will be displayed.
3. Select the Advanced or **Link Spped** tab, and then set the Speed & Duplex values to *the same as those of the switching hub*.
4. Click [OK] in the Network Adapter Properties dialog box.
5. Restart the system.

The link speed setting is now complete.

(2) Using N8104-128

Using N8104-128 with the server, iSCSI Offload Engine must be disabled.

Follow the procedure below to set it.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window. **Broadcom Advanced Control Suite** starts.
2. Set **Filter** to **ALL VIEW**, select **Broadcom BCM57711 NetXtreme II 10 GigE # xx** under **Explorer View** the **Adapter xx (BCM57711 A0) - Port x**.
3. Tab on **Configurations** at the right side screen and then expand **Resource Reservations**.

4. Click the [Configure] button on the **Click the button to configure**.
   The **Hardware and Resource Configuration Wizard** appears.
5. Remove a checkmark from [iSCSI] under **Protocols**, if checked.
   Select [Next], and then click the [Apply] button.
6. When the following message appears, select [Yes].

> Applying the changes will temporarily interrupt the network connection.
> The process may take several minutes and the connection will resume afterwards.
> Do you want to continue?

7. Complete steps 2 to 6 for each N8104-128 network adapter.
   Then, close the **Broadcom Advanced Control Suite**.
8. Restart the system.
   Setup is now completed.

(3) Using N8104-132/133/138

Using N8104-132/133/138 with the server, follow the procedure below to set it.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.
   If Autorun Menu appears, close the menu.

Tips EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

2. Double-click `pgdyavd_disable.vbs` in the following folder.
   - When using EXPRESSBUILDER DVD:

     EXPRESSBUILDER DVD`:\002\win\winnt\ws2008x64\r2\lan\bcom\WS2008x64_r2\lan`

   - If Starter Pack was installed from Internal Flash Memory:

     System drive`:\StartPKG\ws2008x64\r2\lan\bcom\ws2008x64_r2\lan`

3. When the following message appears, click [OK].

> Configuration Completed
> [Option:PopUp RLV Disabled(Action:Done)]
> Reboot the system

Tips The message “Action:Non” indicates that the LAN driver is already set.

4. Eject EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Setup is now completed.

4.5.3 Setting up team/LiveLink(BACS)

Important

- **When using Smart Load Balancing and Failover (without Standby Member), be sure to setup LiveLink at creation of team.**
  When using Smart Load Balancing and Failover (with Standby Member), setup for LiveLink is not essential.
- **When deleting the team, refer to *Chapter 1 (4.5.3 Setting up team/LiveLink) – (4) Procedure for deleting team*. When replacing the motherboard or a LAN board, follow these steps to remove the team and then create it again after replacement.**
- **Be sure to specify the same Jumbo Mtu (Jumbo Packet) setting to all the adapters that compose a team.**
- **Using Server Core installations, Not supporting setting up team/LiveLink by the BACS.**

(1) Team types

The following team types are supported.

- **Smart Load Balancing and Failover (without Standby Member)**
  All adapters that compose the team perform communication.
  If a communication failure occurs on an adapter, other adapters that compose the team continue the communication.
  When the adapter on which the communication failure occurred recovers, it joins the team again and resumes the communication.
- **Smart Load Balancing (Auto-Failback Disable) (with Standby Member)**
  Among the adapters that compose the team, primary adapters except the standby member perform communication.
  If a communication failure occurs, the standby member continues the communication.
  When the adapter on which the communication failure occurred recovers, it joints the team again and the standby adapter returns to the standby state.
- **FEC/GEC Generic Trunking**
  The combination of multiple adapters into a single channel to provide greater bandwidth.

Important

- **LiveLink is not available for this team mode.**
- **FEC/GEC modes require switch support.**

(2) LiveLink

LiveLink is a function that detects communication route failures of adapters.
It periodically investigates the communication status of specified destinations (IP address).

Link packets are sent from each adapter within a team.
If a response to the transmission of a link packet within the specified range is not detected, it is identified as a communication route failure and adapter communication is stopped.

When a response to the submission of a link packet is detected, communication LiveLink identifies communication as having been recovered, and communication using that adapter automatically resumes.

Note

You must set up LiveLink when you create a team.

(3) Setting up team/LiveLink

Important

Possible combinations of network adapters that compose the team are as follows.

When the number of adapters that composes the team is up to four:

- Between standard network adapters
- Between LAN cards excluding N8104-128
- A standard network adapter and LAN card N8104-128

When the number of adapters that composes the team is up to two:

- Between N8104-128 adapters.

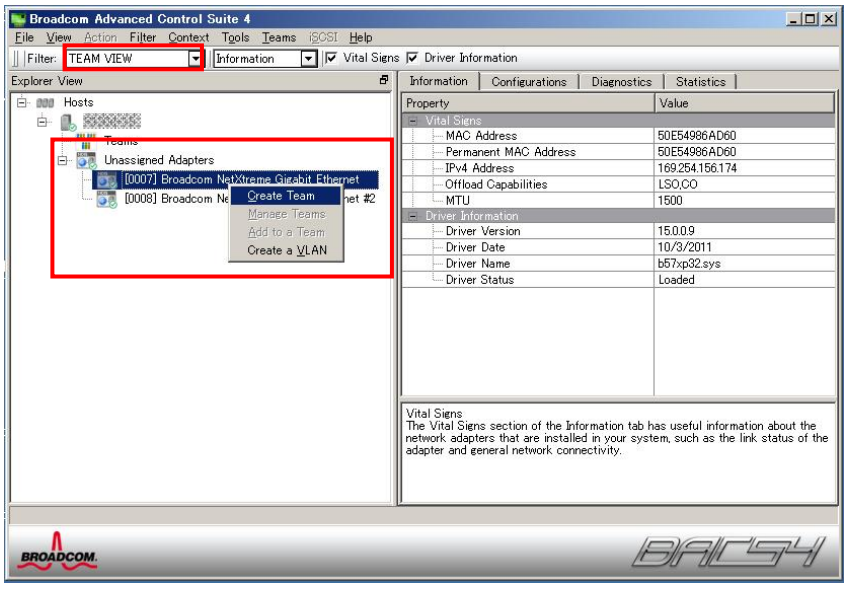
Teaming with another N8104-128 on different board is not supported.

Tips

To edit a team, right-click on the BACS team, and then select **Edit Team**.

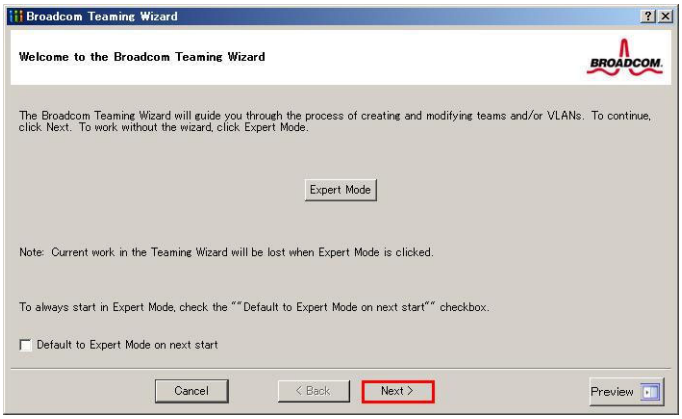
Then refer to step 3 and the subsequent steps to edit the team.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window.
   Broadcom Advanced Control Suite starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Create a Team** from the short-cut menu.



The **Broadcom Teaming wizard** appears.

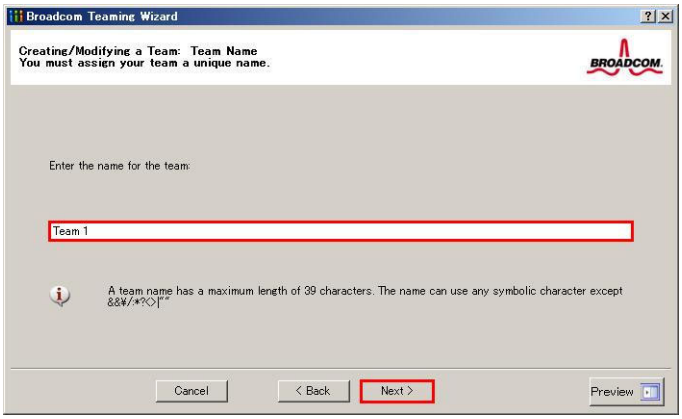
3. Click [Next].


Broadcom Teaming Wizard
Welcome to the Broadcom Teaming Wizard
BROADCOM.
The Broadcom Teaming Wizard will guide you through the process of creating and modifying teams and/or VLANs. To continue, click Next. To work without the wizard, click Expert Mode.
Expert Mode
Note: Current work in the Teaming Wizard will be lost when Expert Mode is clicked.
To always start in Expert Mode, check the ""Default to Expert Mode on next start"" checkbox.
Default to Expert Mode on next start
Cancel
< Back
Next >
Preview

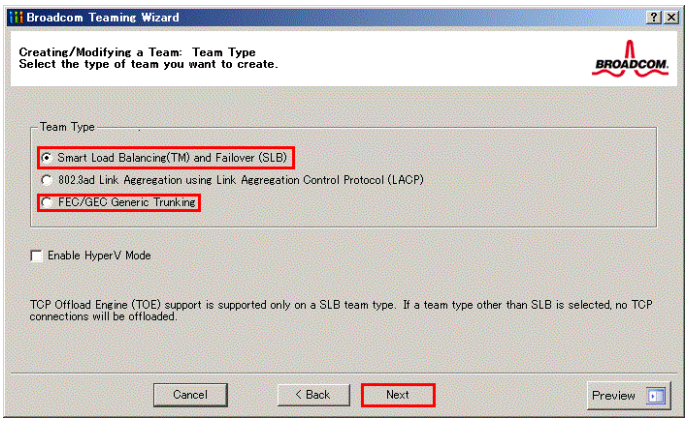
Note

Do not use **Expert Mode**.

4. Enter any name into the team name entry column, and then click [Next].


Broadcom Teaming Wizard
Creating/Modifying a Team: Team Name
You must assign your team a unique name.
BROADCOM.
Enter the name for the team:
Team 1
A team name has a maximum length of 39 characters. The name can use any symbolic character except &&¥/:*?<>|""
Cancel
< Back
Next >
Preview

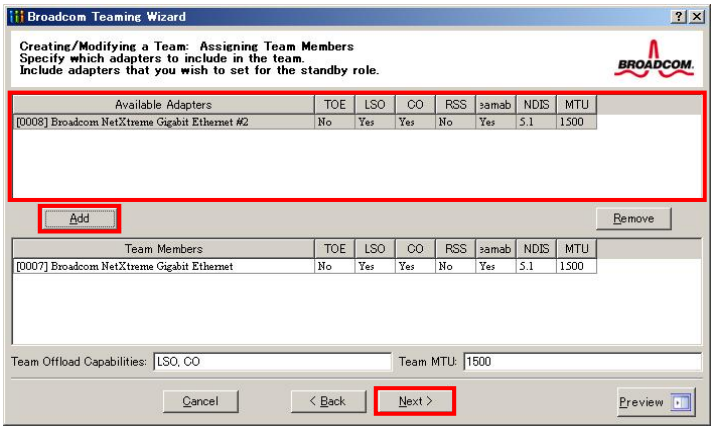
5. Team Type select the type of team you want to create, and then click [Next].


Broadcom Teaming Wizard
Creating/Modifying a Team: Team Type
Select the type of team you want to create.
BROADCOM.
Team Type
Smart Load Balancing(TM) and Failover (SLB)
802.3ad Link Aggregation using Link Aggregation Control Protocol (LACP)
FEC/GEC Generic Trunking
Enable HyperV Mode
TCP Offload Engine (TOE) support is supported only on a SLB team type. If a team type other than SLB is selected, no TCP connections will be offloaded.
Cancel
< Back
Next
Preview

Note

- 802.3ad Link Aggregation using Link Aggregation Control Protocol(LACP) is not supported.
- When the FEC/GEC Generic Trunking selected.
  The following message will appears, select [OK].
  "Verify that the network switch connected to the team members is configured correctly for the team type."
- When using Hyper-V, check to "Enable HyperV Mode".

6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].



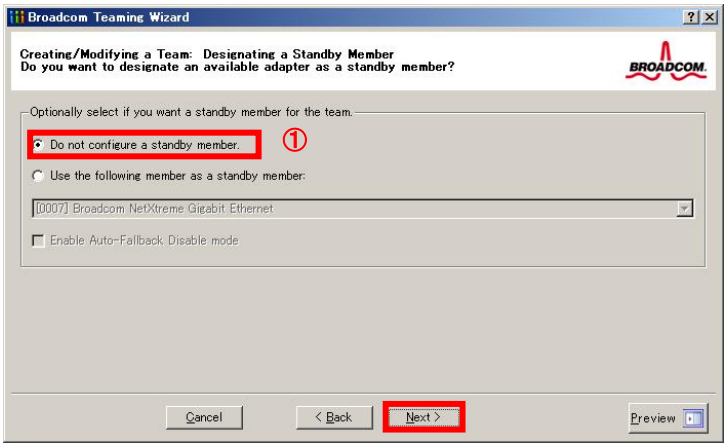
Note When selecting FEC/GEC Generic Trunking, skip to step 15.

7. Proceed according to your desired team type.

– Smart Load Balancing and Failover (without Standby Member)

(1) Select **Do not configure a standby member**.

(2) Click [Next].


Broadcom Teaming Wizard
Creating/Modifying a Team: Designating a Standby Member
Do you want to designate an available adapter as a standby member?
BROADCOM.
Optionally select if you want a standby member for the team.
Do not configure a standby member.
①
Use the following member as a standby member:
[0007] Broadcom NetXtreme Gigabit Ethernet
Enable Auto-Fallback Disable mode
Cancel
< Back
Next >
Preview

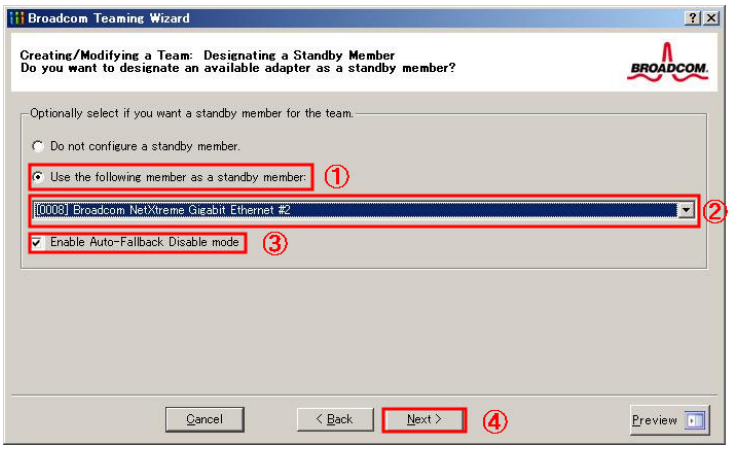
– Smart Load Balancing (Auto-Failback Disable) (with Standby Member)

(1) Select **Use the following member as a standby member**.

(2) Select the adapter that is to be a standby member from the drop-down list.

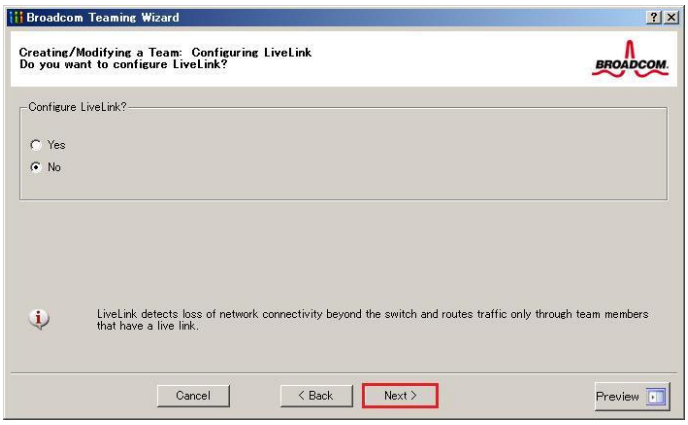
(3) Select **Enable Auto-Failback Disable mode**.

(4) Click [Next].

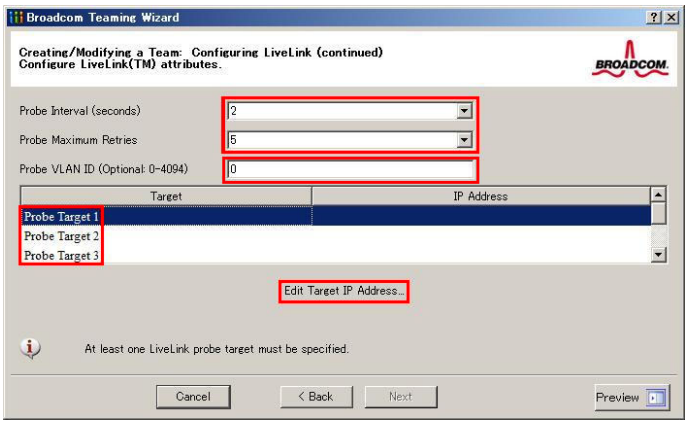

Broadcom Teaming Wizard
Creating/Modifying a Team: Designating a Standby Member
Do you want to designate an available adapter as a standby member?
BROADCOM
Optionally select if you want a standby member for the team.
Do not configure a standby member.
Use the following member as a standby member:
①
[0008] Broadcom NetXtreme Gigabit Ethernet #2
②
Enable Auto-Failback Disable mode
③
Cancel
< Back
Next >
④
Preview

Note *Enable Auto-Failback Disable mode* is cleared while editing the team. Select it again.

8. When configure LiveLink, select Yes and click [Next] and go to step 9.
When LiveLink is unnecessary, select No and click [Next] and then go to step 15.


Broadcom Teaming Wizard
Creating/Modifying a Team: Configuring LiveLink
Do you want to configure LiveLink?
BROADCOM
Configure LiveLink?
Yes
No
LiveLink detects loss of network connectivity beyond the switch and routes traffic only through team members that have a live link.
Cancel
< Back
Next >
Preview

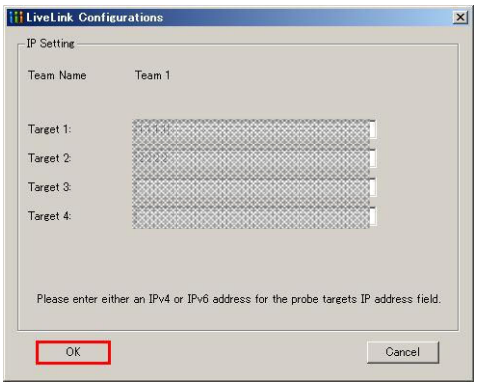
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target *xx***), and then click [Edit Target IP Address…].



Tips

- The setting range of Probe interval (link packet transmission interval) is 1 to 60 (units: seconds).
- The setting range of Probe maximum retries (link packet retry count) is 1 to 10 (times).
- Switching a path upon detection of a communication path error by LiveLink takes (Probe maximum retries + 1) x Probe interval (seconds) at maximum. If a link is down is detected, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down.
- When using Tagged VLAN, input VLAN ID to "Probe VLAN ID".

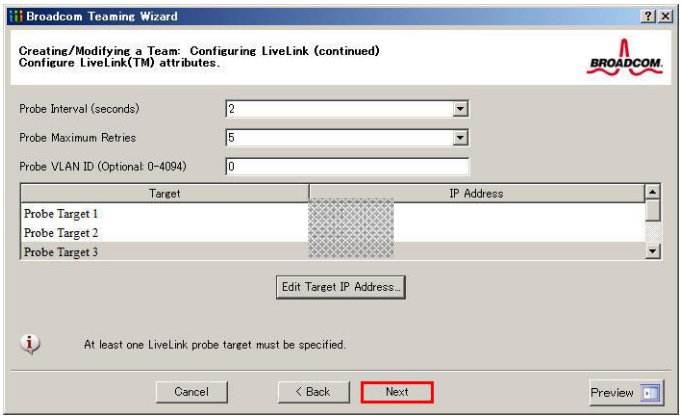
10. In the **Target *xx*** text box, enter the IP address of the alive monitoring server, and then click [OK].



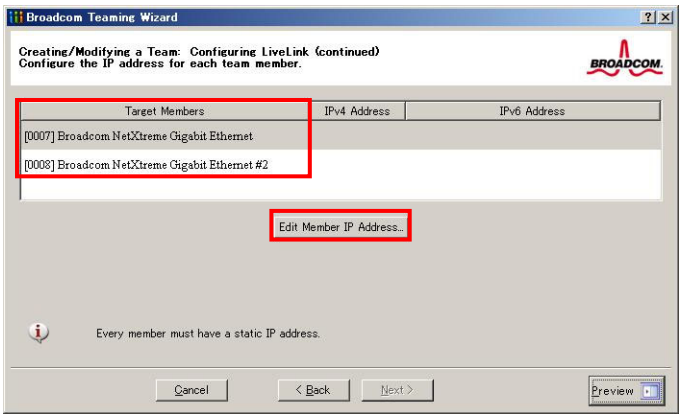
Note

- *Target xx* must be the same broadcast domain as that specified for the data communication IP and LiveLink communication IP (described in step 13). Specify an IP address that exists on the network and with which communication is possible.
- If communication with the IP address specified in *Target xx* is not possible, the team will also be unable to communicate. It is therefore recommended that you specify multiple IP addresses using *Probe Target*. Up to four IP addresses can be specified.

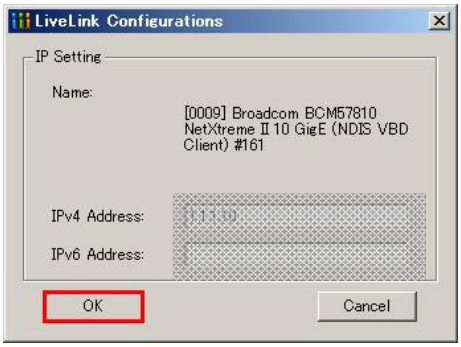
11. Click [Next].



12. Select an adapter from the **Team Members** area, and then click [Edit Member IP Address…].



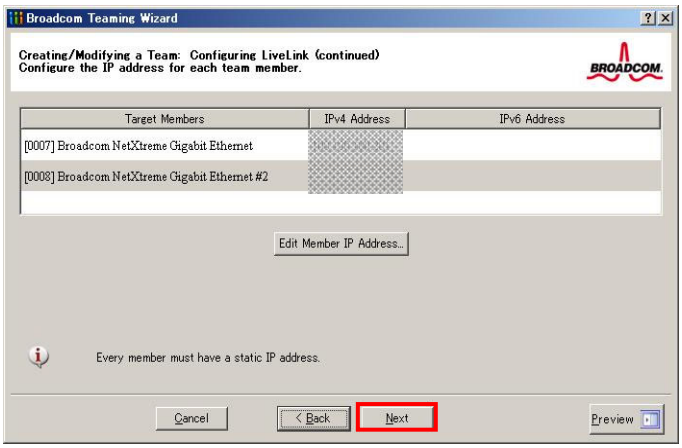
13. Enter the IP address used for LiveLink communication, and then click [OK].



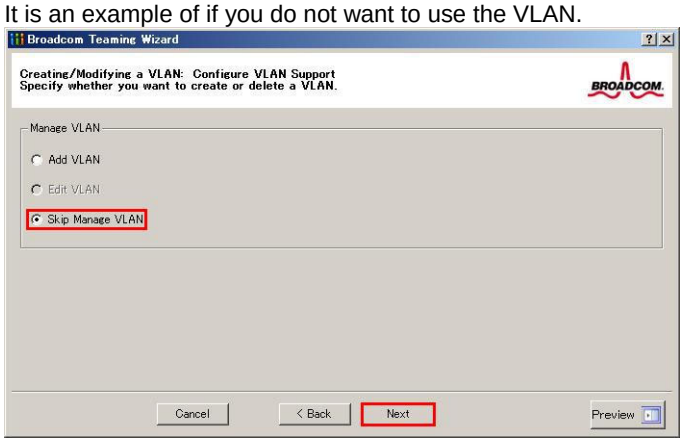
Note

- Be sure to specify an IP address for LiveLink communication for all the adapters that compose the team. The address specified here is the IP address for LiveLink communication. Specify a different IP address for data communication.
- For *Target xx*, specify an IP address that is unique on the network and with which communication is possible.

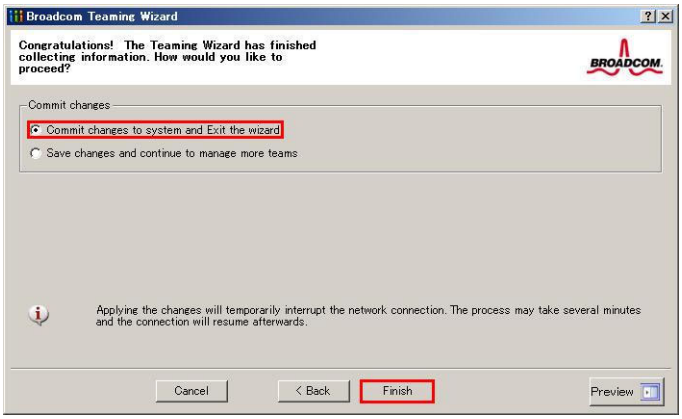
14. Click [Next].



15. Make sure that **Skip manage VLAN** is selected under **Manage VLAN**, and then click [Next].
It is an example of if you do not want to use the VLAN.



16. Make sure that **Commit changes to system and Exit the wizard** is selected under **Commit changes**, and then click [Finish].


Broadcom Teaming Wizard
Congratulations! The Teaming Wizard has finished collecting information. How would you like to proceed?
BROADCOM.
Commit changes
Commit changes to system and Exit the wizard
Save changes and continue to manage more teams
Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards.
Cancel
< Back
Finish
Preview

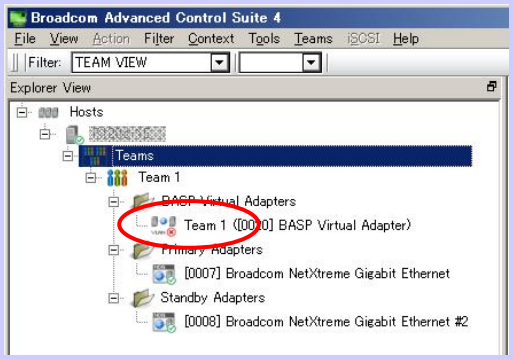
Note

When the message below appears, select [Yes].

"Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards."

Tips

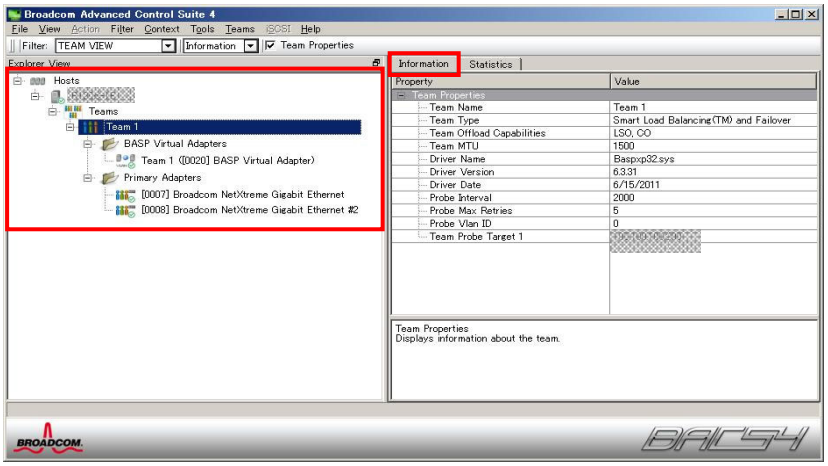
After creating a team, if the teaming adapter displays like the following image, perform steps 8 through 14 again and correct the LiveLink settings.



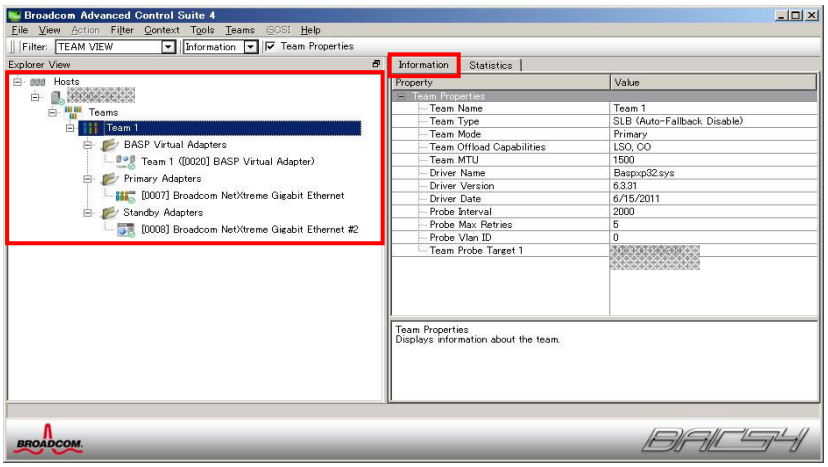
17. Restart the system.

18. After the system starts, start **Broadcom Control Suite** by clicking the **Broadcom Control Suite** icon in **Control Panel**, and confirm that a team has been created. Confirm the team settings on the **Information** window to the right.

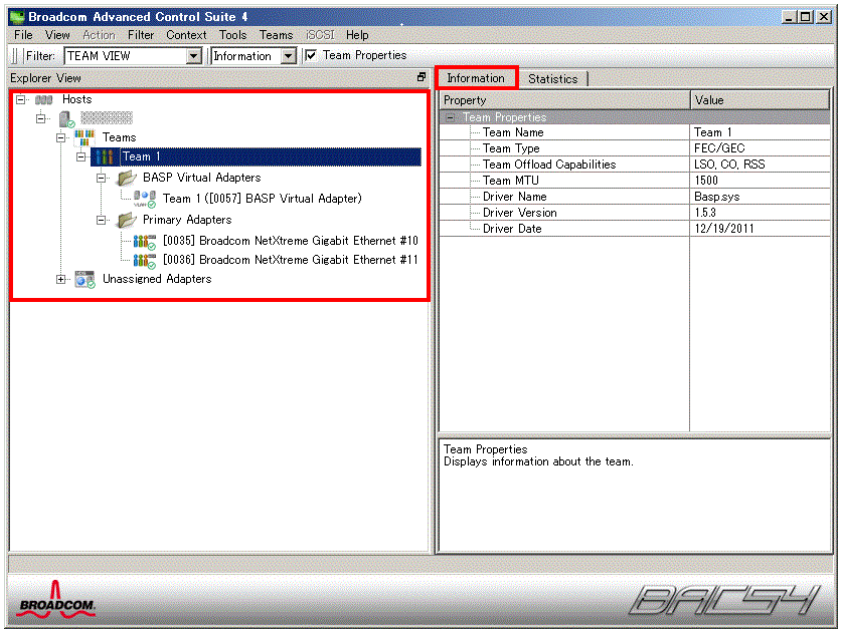
– Smart Load Balancing and Failover (without Standby Member)



– Smart Load Balancing (Auto-Failback Disable) (with Standby Member)



– FEC/GEC Generic Trunking



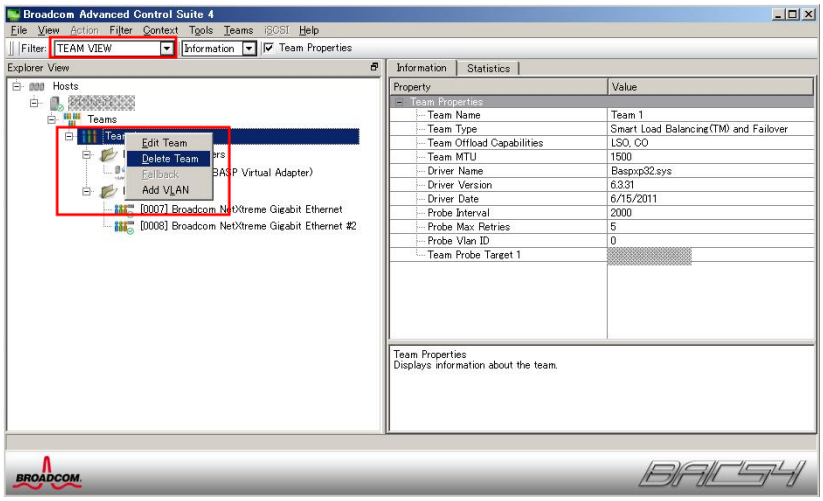
Team setup is now complete.

(4) Procedure for deleting team

Note

You must delete teams from **Broadcom Control Suite**.
You cannot delete the team from the team adapter displayed in the **Device Manager**.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window.
   Broadcom Advanced Control Suite starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Delete Team** from the short-cut menu.



Note

When the message below appears, select [Yes].

```
"The selected team will be deleted from system, do you want to
proceed?
   NOTE:  Applying the changes will temporarily interrupt the
          network connection. The process may take several
          minutes and the connection will resume afterwards."
```

3. Insert EXPRESSBUILDER DVD into the optical disk drive.
   If Autorun Menu appears, close the menu.

Tips

You do not have to insert EXPRESSBUILDER DVD if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

4. Double-click `addlvlanstats.vbs` in the following folder.
   - When using EXPRESSBUILDER DVD:
     `EXPRESSBUILDER DVD``:\002\win\winnt\ws2008x64\r2\lan\bcom\ws2008x64_r2\lan`
   - If Starter Pack was installed from Internal Flash Memory:
     `System drive``:\StartPKG\ws2008x64\r2\lan\bcom\ws2008x64_r2\lan`

5. When the following message appears, click [OK].

6. Eject EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Team deletion is now complete.

4.5.4 Setting up team (PROSet)

(1) Team types

The following team types are supported.

- Adapter Fault Tolerance (AFT) is a feature that creates a group containing and automatically converts the process of the working adapter to the other adapter in the group when any trouble occurred on that adapter.
- Adaptive Load Balancing (ALB) is a feature that creates a group containing more than one adapter and enhances the throughput by operating packet transmission from the server by all the adapters. This feature includes AFT feature.
- Switch Fault Tolerance (SFT) is a feature that provides a failover relationship between two ports when each port is connected to a separate switch. SFT supports two ports per team.
- Static Link Aggregation (SLA) accounts for the GEC and 802.3ad static protocols. SLA is a switch-assisted teaming mode and requires configuring ports at both ends of the link: server interfaces and switch ports.

Important

- **The adapters specified as a group of Adaptive Load Balancing (ALB) can be connected to only Switching Hub.**
- **When exchange the mother board or option network card, make sure to remove the adapter team before exchanges and recreate the adapter team after exchange complete.**
- **Confirm the port setting of switching hub (L2) matches the server network adapter Teaming mode.**
- **All the adapters specified as a group of Adapter Teaming must exist on the same LAN. If they are connected to the separate switches, they will not work normally.**

(2) Setting up team

Important

Possible combinations of network adapters that compose the team are as follows.

When the number of adapters that composes the team is up to four:

- **Between N8104-145 adapters.**

1. Open the **Device Manager**.
2. Open **Network adapters** → [Intel(R) xxx] properties.
3. Click **Teaming** tab and check the **Team this adapter with other adapters** check box.
   Click **New Team**.
4. Fill the name of the team in **Specify a name for the team** and click **Next**.
5. Include the adapter to the team and click **Next**.
6. Select a team mode, and then click **Next**.
7. Click **Finish**.
8. Click **TEAM: "Team name"** from **Device manager** → **Network adapters** to modify the team.
   Click **Settings** tab and click **Modify Team** button.
9. Refer to the following procedure to set the team member adapter priority status.

Note

Adapter priority config can be confirmed by the following procedure:

1. Click [TEAM: "Team name"] from [Device manager] → [Network adapters].
2. Click [Settings] and confirm Adapters in team list.

10. Click **Test Switch** → **Run test** to confirm the adapter team is properly setup.
11. Confirm the result in [Test results].
12. Restart the system.

(3) Procedure for deleting team

1. Open the **Device Manager**.
2. Click **Network adapters**, and open [TEAM: "Team name"] properties.
3. Click **Setting** tab.
4. Click **Remove Team** button.
5. Click **Yes** to the message.
6. Confirm [TEAM: "Team name"] adapter is not existing in [Network adapters] tree and restart the system.

4.5.5 Graphics accelerator driver

The graphics accelerator driver for standard configurations is installed when Starter Pack is installed from EXPRESSBUILDER.

Tips The graphics accelerator driver is only enabled in Full installations. Standard VGA is used in the case of Server Core installation.

To reinstall drivers separately, complete the following steps.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.
   If Autorun Menu appears, close the menu.

   Tips You do not have to insert EXPRESSBUILDER DVD if Starter Pack was installed from Internal Flash Memory.

2. From the **Start** menu, point to **All programs**, **Accessories**, and then select **Explorer**.
3. Double-click the **install.bat** icon in the following folder.
   - When using EXPRESSBUILDER DVD:
     EXPRESSBUILDER DVD:\002\win\winnt\ws2008x64\video
   - If Starter Pack was installed from Internal Flash Memory:
     System drive:\StartPKG\ws2008x64\video

   You will be prompted to confirm the End User License Agreement during this process. Click the [ACCEPT] button and continue.
4. Eject EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Graphic accelerator driver installation is now complete.

4.5.6 When using a SAS controller (N8103-142)

The driver for SAS controller N8103-142 is automatically installed by Windows Plug-and-Play.

4.5.7 When using a RAID Controller (N8103-161)

The driver for RAID Controller N8103-161 is automatically installed by Windows Plug-and-Play.

4.5.8 When using a Fibre Channel controller (N8190-153/154)

The driver for Fibre Channel controller N8190-153/154 is automatically installed by Windows Plug-and-Play.

4.6 License Authentication

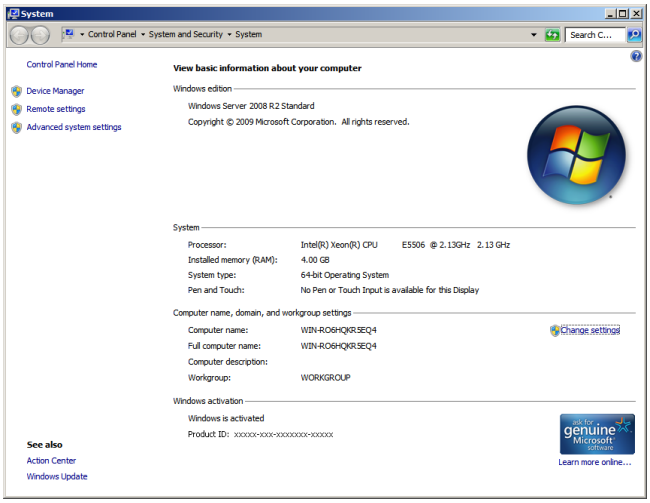
To use Windows Server 2008 R2, confirm whether the license has been authenticated, and if it has not, perform the license authentication procedure.

The following describes the license authentication procedure.

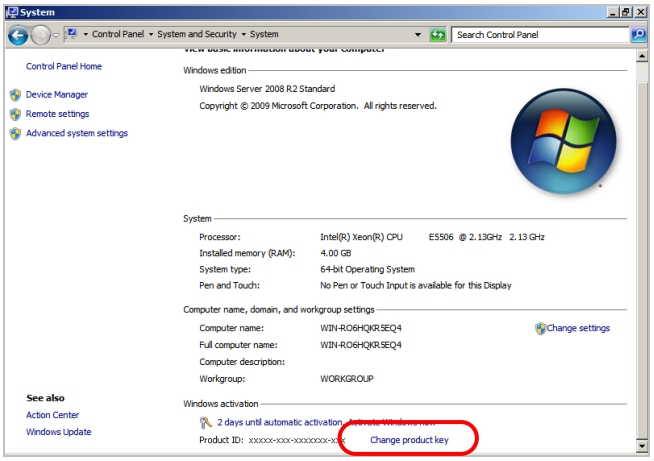
(1) Full installations

1. Open the **Control Panel** from the **Start** menu, click **System and Security**, and then select **System**.

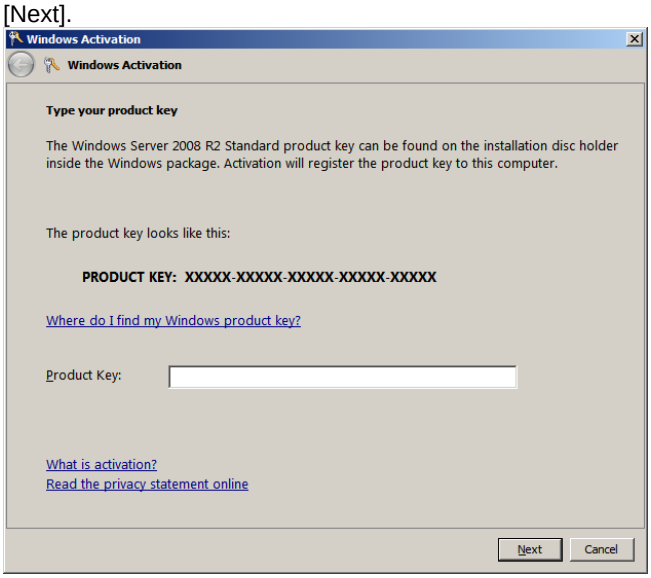
   If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure.



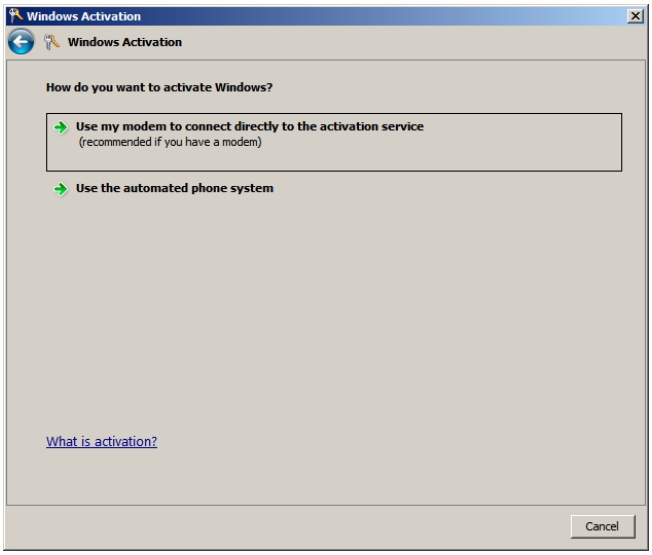
2. For installation from Backup DVD-ROM, replace the product key.
   When the following window appears, click **Change product key**.



3. When the following window appears, enter the product key found on the COA label, and then click [Next].


Windows Activation
Windows Activation
Type your product key
The Windows Server 2008 R2 Standard product key can be found on the installation disc holder inside the Windows package. Activation will register the product key to this computer.
The product key looks like this:
PRODUCT KEY: XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
Where do I find my Windows product key?
Product Key:
What is activation?
Read the privacy statement online
Next
Cancel

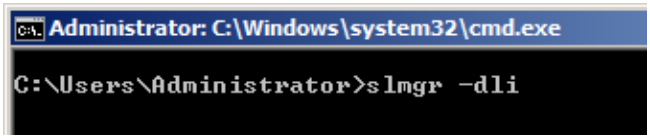
4. Follow the instructions in the following message to start the license authentication process.


Windows Activation
Windows Activation
How do you want to activate Windows?
Use my modem to connect directly to the activation service
(recommended if you have a modem)
Use the automated phone system
What is activation?
Cancel

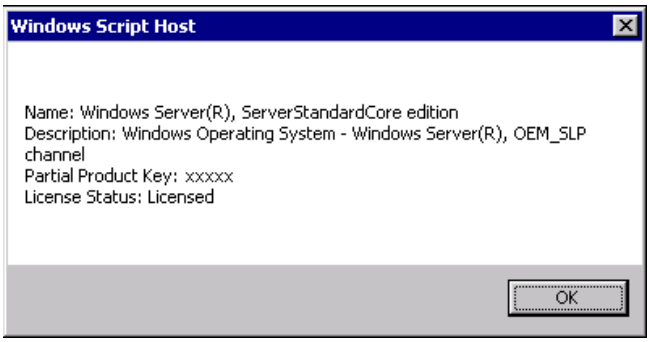
Windows activation is now complete.

(2) Server Core installations

1. At the command prompt, enter the following, and then press <Enter> key.
   `slmgr -dli`

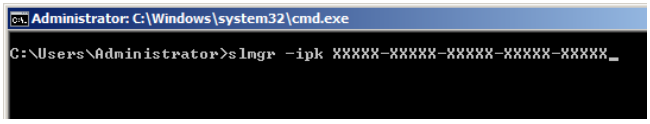


If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure. Click [OK] to finish.


Windows Script Host
Name: Windows Server(R), ServerStandardCore edition
Description: Windows Operating System - Windows Server(R), OEM_SLP channel
Partial Product Key: xxxxx
License Status: Licensed
OK

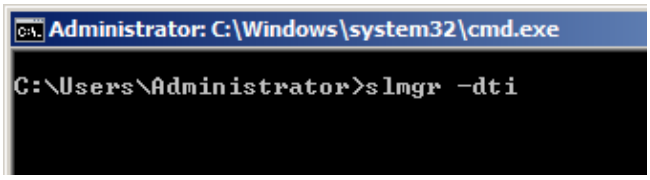
2. For installation from Backup DVD-ROM, replace the product key.

   At the command prompt, enter the following, and then press <Enter> key. Set the product key found on the COA label in *PID*.
   `slmgr -ipk PID`



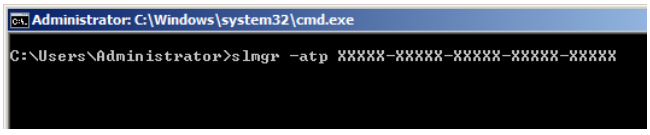
3. Obtain an installation ID for Windows activation.

   At the command prompt, enter the following, and then press <Enter> key.
   `slmgr -dti`



4. Reference `%systemroot%\system32\sppui\phone.inf` for the telephone number of the license authentication customer service.
5. Call the above number, inform the representative of the installation ID which you obtained in step 3, and receive a confirmation ID.
6. Type the confirmation ID you received in step 5.

   At the command prompt, enter the following, and then press <Enter> key. *CID* is the confirmation ID that you received from customer service.
   `slmgr -atp CID`



Windows activation is now complete.

4.7 Applying Service Pack

When applying Service Pack 1, refer to *"About Windows Server 2008 R2 and Windows 7 Service Pack 1"*.

http://www.58support.nec.co.jp/global/download/w2008r2/sp1.html

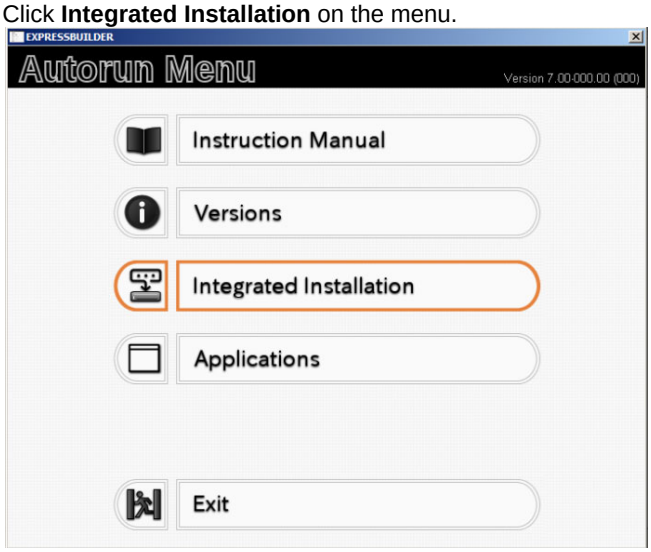
4.8 Installing the Applications

EXPRESSBUILDER contains applications including NEC ESMPRO Agent and NEC ESMPRO Manager. Some applications stored in EXPRESSBUILDER can be installed collectively by performing the procedures described below. When installing these applications individually, see *Chapter 2* (*Installing Bundled Software*).
This feature is *only available on the Full installations*.

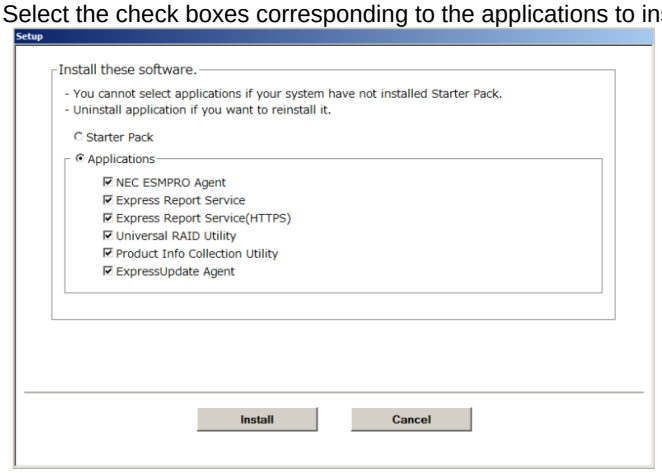
1. Log on to the system with the built-in administrator, which has administrative privileges.

2. Insert the EXPRESSBUILDER DVD into the optical disk drive.

3. Click **Integrated Installation** on the menu.



4. On the following screen, make sure that the **Applications** option is selected.
   Select the check boxes corresponding to the applications to install, and then click **Install**.



Note

- If Starter Pack is already installed, the **Applications** option is selected by default.
- Applications available for installation are selected by default.
- An application that has been already installed need to be uninstalled before installing it again.
- If your system environment does not satisfy the prerequisite for an application, you cannot install it. (For details, refer to the on-screen information and the relevant page of each application.)

The selected applications are automatically installed.

5. When a message appears, click **Restart**, and then remove the EXPRESSBUILDER disk from the optical disk drive.

Now installation of applications is completed.

4.9 Installation When Multiple Logical Drives Exist

Before starting installation, backup data for future use in case of data loss.

(1) Installation process

– Setup with EXPRESSBUILDER

Important **Before starting setup, be sure to disconnect hard disk drives from the RAID Controller that is not to be setup. Install those hard disk drives after setup has completed. Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally.**

Refer to *Chapter 1 (4.2 Setup with EXPRESSBUILDER)*, and proceed with setup.

In this case, EXPRESSBUILDER installs the Windows on the first detected hard disk drive or logical drive.

– Setup with Windows standard installer

1. Refer to *Chapter 1 (4.3 Setup with Windows Standard Installer)*, and start setup.
2. When the following message appears, select the partition to which you want to install the operating system.

```
Select the location to which Windows will be installed
```

The order and numbers of the disks displayed on the screen **might not match the server's slot** of the hard disk drives. **Distinguish between the hard disk drives by viewing the hard disk drive capacity and partition size** displayed on the screen, and then select a drive to install the Windows system.
Selecting an improper drive might cause an unintentional corruption of the existing data. Be careful when selecting a hard disk drive on which to install the system.

Important
- **For details, refer to the following Microsoft website: http://support.microsoft.com/kb/937251/en-us**
- **You cannot edit the drive letters for the system volume or boot volume after setup is complete. Make sure that the drive letters assigned in this window are correct, and then proceed with setup.**

3. Refer to *Chapter 1 (4.3 Setup with Windows Standard Installer)*, and proceed to setup Windows with Windows standard installer and the instructions.

Tips The drive letter might change after installation. If you want to change the drive letter, use the procedure shown in *Changing drive letter assignments* below.

(2) Changing drive letter assignments

To change the drive letter, follow the steps below. But these steps cannot change drive letter assignments for the system volume or boot volume. If you want to change them, re-install the Windows.

1. From the **Start** menu, right-click **Computer** and then select **Management**. Next, launch **Server Manager**.
2. From the window on the left, select **Storage** and then **Disk Management**.
3. Right-click the volume whose drive letter you want to change, and then select **Change drive letter and path**.
4. Click [Change].
5. Click [Assign next drive letter], and then select the drive letter you want to assign.
6. Click [OK].
7. When the following message appears, read the contents and then click [OK].

   ```
   Some programs are dependent on drive letters, and may
   not run properly. Continue?
   ```

8. Close the Server Manager.

5. Setting Up Windows Server 2008

Set up Windows Server 2008.

5.1 Before Starting Setup

Read through the cautions explained here before starting setup.

EB : Confirm during Setup with EXPRESSBUILDER

OS : Confirm during Setup with Windows standard installer

Hardware configuration		
The following hardware configurations require special procedures.		
EB	OS	**Reinstalling to a mirrored volume** When you install Windows Server 2008 in an environment with a mirrored volume created using Windows, disable mirroring before installing the operating system and enable it again after the installation. Use [Computer Management] – [Disk Management] to create, disable, or remove the mirrored volume.
EB	OS	**Peripheral devices such as RDX/MO** Remove an MO device before installing an OS. Some peripheral devices need to be halted before installation. Refer to the manual provided with the peripheral devices for how to set a device appropriate to installation.
EB	OS	**DAT, LTO, and similar media** Do not set media that is unnecessary to installation during setup.
EB	OS	**Connecting to multiple hard disk drives (logical drives)** For details on installing operating systems to a system in which multiple logical drives exist, refer to *Chapter 1* (*5.10 Installation When Multiple Logical Drives Exist*).
EB	OS	**Reinstalling to hard disk drives that have been upgraded to dynamic disks** If the hard disk drive has been upgraded to a dynamic disk, the operating system cannot be reinstalled to it with the existing partitions. Set up the operating system with the Windows standard installer.

EB OS

Setup when mass memory is installed

If mass memory is installed in your system, the large size of paging file is required at installation. Thus, the partition size for storing debug information (dump file) may not be secured.
If you fail to secure the dump file size, use Windows standard installer for setup, and allocate the required file space to multiple disks by performing the following steps.

1. Set the system partition size to a size sufficient to install the OS and paging file.
2. Specify another disk as destination to store the debug information (required dump file size) by referring to *Chapter 1 (6. Setup for Solving Problems)*.

If the hard disk drive does not have enough space to write the debug information, set the partition size to a size sufficient to install the OS and paging file, and then add another hard disk drive for the dump file.

Note

If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.

— Specify a drive other than the system drive for "Dedicated Dump File".

Create the registry shown below by using the Registry Editor and specify the name of Dedicated Dump File.

<When specifying the file named "dedicateddumpfile.sys" in drive D>

Key:	HKEY_LOCAL_MACHINE\SYSTEM \CurrentControlSet\Control\CrashControl
Name:	DedicatedDumpFile
Type:	REG_SZ
Data:	D:\dedicateddumpfile.sys

Note the following when specifying Dedicated Dump File:

- Pay strict attention to edit the registry.
- The setting is applied after restarting the system.
- Specify a drive that has free space of "installed memory size + 300 MB" or more.
- Dedicated Dump File cannot be placed in dynamic volumes.
- To collect memory dump by using Dedicated Dump File, a paging file is required in any drive.
- Dedicated Dump File is only used for collecting memory dump, and is not used as virtual memory. Specify the paging file size so that sufficient virtual memory can be allocated in the entire system.

System partition size <Windows Server 2008 64-bit Edition>

EB OS

The system partition size can be calculated by using the following formula.
Size required to install the OS + paging file size + dump file size + application size

Full installations

Size required to install the OS	= 16,720 MB (Windows Server 2008 + Service Pack 2 DVD-ROM) = 12,300 MB (Windows Server 2008 with Service Pack 2) = 11,600 MB (Windows Server 2008)
Paging file size (recommended)	= installed memory size × 1.5
Dump file size	= installed memory size + 300MB
Application size	= as required by the application

Server Core installations

Size required to install the OS	= 9,300 MB (Windows Server 2008 + Service Pack 2 DVD-ROM) = 12,300 MB (Windows Server 2008 with Service Pack 2) = 4,100 MB (Windows Server 2008)
Paging file size (recommended)	= installed memory size × 1.5
Dump file size	= installed memory size + 300MB
Application size	= as required by the application

For example, if the installed memory size is 1 GB (1,024 MB) and Full installations is selected, the partition size is calculated as follows:

11,600 MB + (1,024MB × 1.5) + 1,024MB+ 300MB+ application size
= 14,460MB + application size

The above mentioned partition size is the minimum partition size required for system installation. Ensure that the partition size is sufficient for system operations.

Note

- The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the Windows partition paging file must be large enough to store dump files.
  Make sure you set a sufficient paging file size. If the paging file is insufficient, there will be a virtual memory shortage that may result in an inability to collect correct debug information.
- Regardless of the sizes of internal memory and write debug information, the maximum size of the dump file is "size of internal memory + 300 MB".
- When installing other applications or other items, add the amount of space needed by the application to the partition.

If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.

System partition size <Windows Server 2008 32-bit Edition>

EB OS

The system partition size can be calculated by using the following formula.

Size required to install the OS + paging file size + dump file size + application size

Full installations

Size required to install the OS	= 9,400 MB (Windows Server 2008 + Service Pack 2) = 9,300 MB (Windows Server 2008 with Service Pack 2) = 6,300 MB (Windows Server 2008)
Paging file size (recommended)	= installed memory size × 1.5
Dump file size	= installed memory size + 300MB
Application size	= as required by the application

Server Core installations

Size required to install the OS	= 5,300 MB (Windows Server 2008 + Service Pack 2) = 9,300 MB (Windows Server 2008 with Service Pack 2) = 2,200 MB (Windows Server 2008)
Paging file size (recommended)	= installed memory size × 1.5
Dump file size	= installed memory size + 300MB
Application size	= as required by the application

For example, if the installed memory size is 1GB (1,024 MB) and Full installations is selected, the partition size is calculated as follows:

6,300 MB + (1,024 MB × 1.5) + 1,024 MB + 300 MB + application size = 9,160 MB + application size

The above mentioned partition size is the minimum partition size required for system installation. Ensure that the partition size is sufficient for system operations.

Note

- The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the boot volume paging file must be large enough to store dump files. Make sure you set a sufficient paging file size. If the paging file is insufficient, there will be a virtual memory shortage that may result in an inability to collect correct debug information.
- A paging file size of 4096 MB or greater cannot be specified for one partition in some system configurations.
  If the message prompting you to specify a value smaller than 4096 MB appears, specify 4095 MB.
- If the mounted memory size is 2 GB or greater, the maximum size of the dump file is "2048 MB + 300 MB".
- When installing other applications or other items, add the amount of space needed by the application to the partition.

If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.

Using BitLocker

If using BitLocker, note the following.

- Before installing an OS, be sure to create the following two partitions in the hard disk drive:
  - System partition (to store the loader)
  - Boot partition (to store the OS)

Note For details, refer to the following document provided in Microsoft TechNet:
BitLocker Drive Encryption Step-by-Step Guide

- Be sure to keep the recovery password secure. Do not keep it near a server running BitLocker.

EB OS

Important

If the recovery password is not entered, the OS cannot be started, and the content of the partition encrypted by BitLocker cannot be referenced any more.

The recovery password might be required at startup of the OS after the following:

- **Replacement of motherboard**
- **Initialization of trusted platform module (TPM)**
- **Change of BIOS setting**

- To reinstall the operating system into a partition that is encrypted with BitLocker, delete the BitLocker-encrypted partition prior to reinstallation.

Installing Service Pack

EB OS

- If the OS installation media contains Service Pack 2, you need not apply the service pack again.
- You can install the Service Pack on the server. When the Service Pack is not attached to your system, prepare it by yourself.

License authentication

License authentication is required depending on the installation of Windows.
For details, refer to *Chapter 1 (5.7 License Authentication)*.

EB OS

Note

- Activate within 30 days following installation.
- A virtual product key is used when installing in a virtual environment. It is not used when directly installing an operating system to a physical server.

5.2 Setup with EXPRESSBUILDER

This section describes how to install Windows with EXPRESSBUILDER.

This feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following "*User's Guide* ".

Important

- **Setup with EXPRESSBUILDER may delete all data of the hard disk drive depending on the settings. Pay attention to input parameters. You must be especially careful when configuring the following:**
  - **RAID settings**
  - **Partition Settings**

  Backing up user data, as needed, is recommended.
- **Before starting setup, be sure to disconnect hard disk drives from the RAID Controller that is not to be setup. Install those hard disk drives after setup has completed. Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally. It is recommended to make backup copy of user data before starting setup.**

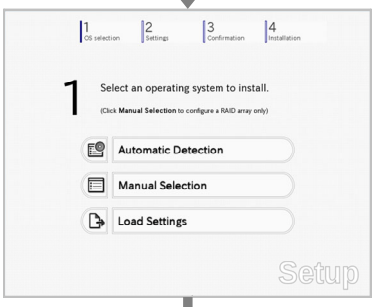
Note

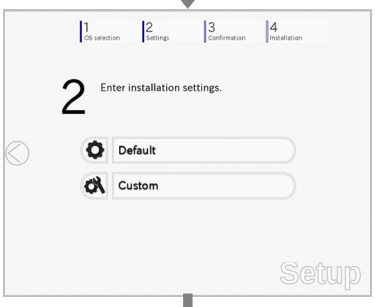
- The Scalable Networking Pack (SNP) function is disabled on systems that have been installed by using EXPRESSBUILDER.
  The setting of SNP function may affect the system performance.
  Contact your sales representative for details.

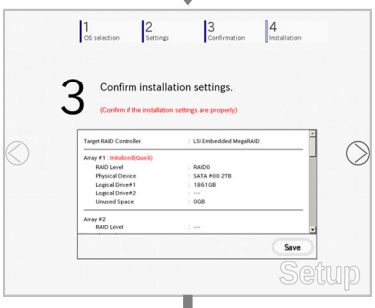
Tips

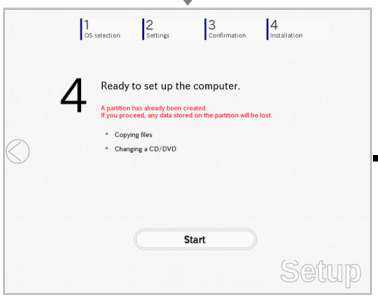
- Setup with EXPRESSBUILDER allows you to use a prespecified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, refer to *Chapter 1* (*7. Windows OS Parameter File)*.

5.2.1 Setup flow









Configure the RAID system.

Set EXPRESSBUILDER in the optical disk drive.

Copy the selected applications and setup modules.

Insert the OS installation media into the optical disk drive.

The OS is installed automatically.

The Starter Pack and the selected applications are installed.

Agree the license terms and Log on.

Installation completes.

	Process that requires input or selection
	Process that proceeds automatically

5.2.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

- Either of the following OS installation media
  - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
  - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2008 DVD-ROM*)

- **First Steps Guide**

- Either of the following EXPRESSBUILDER
  - **EXPRESSBUILDER DVD**
  - **Internal Flash Memory** (optional)

- Prepare if needed:
  - **Removable media for Windows OS parameter file**
  - **Service Pack**
    (If the OS installation media contains Service Pack 1, you need not apply the service pack again.)

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory. EXPRESSBUILDER can be run from Internal Flash Memory if it is installed in the server.
- If you are using a server with Internal Flash Memory installed, you can install the OS without using EXPRESSBUILDER DVD.

5.2.3 Setup procedure

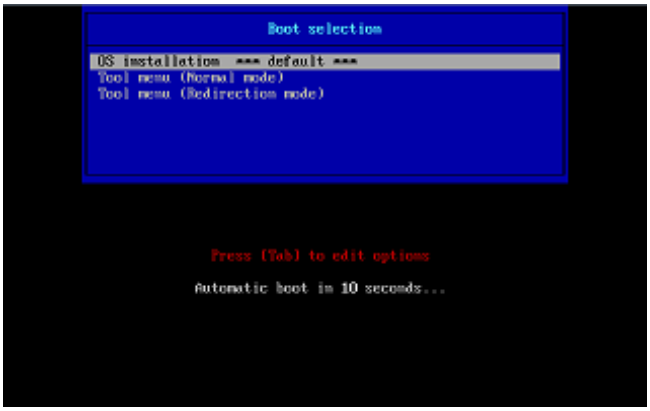
During Setup with EXPRESSBUILDER, parameters are specified through the wizard. You can also save the parameters as one file (a parameter file) to removable media.

Note Read through the items in *Chapter 1 (5.1 Before Starting Setup)* prior to installing Windows.

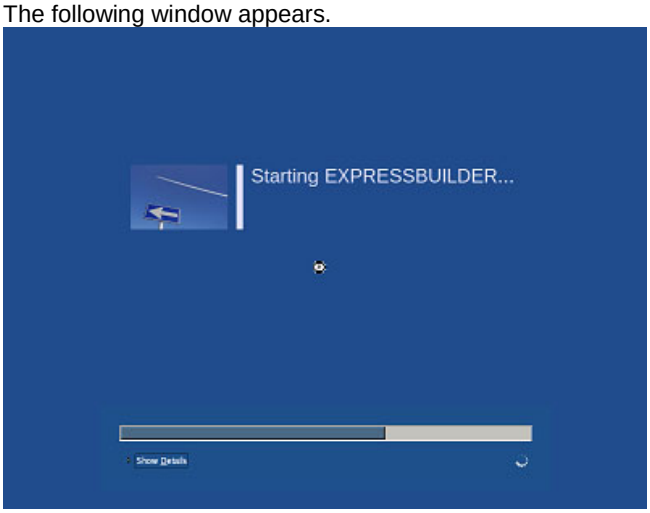
1. Turn peripheral device (such as a display) power on, and then turn the server power on.

2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.

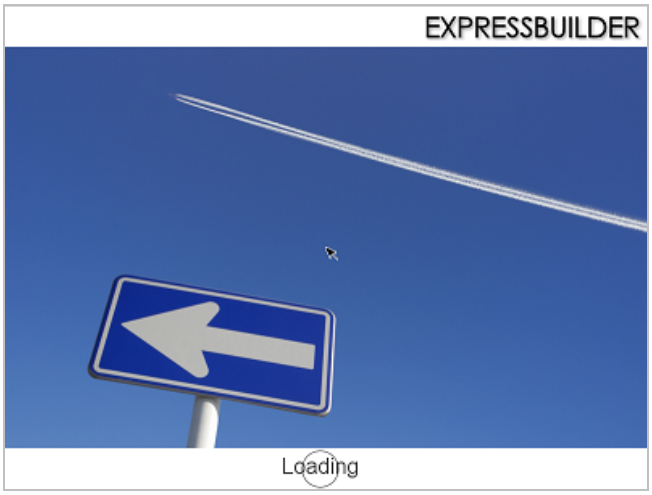
3. Select **Os installation *** default ***.**
You will automatically advance to step 4, with no need for further input.


Boot selection
OS installation *** default ***
Tool menu (Normal mode)
Tool menu (Redirection mode)
Press (Tab) to edit options
Automatic boot in 10 seconds...

The following window appears.

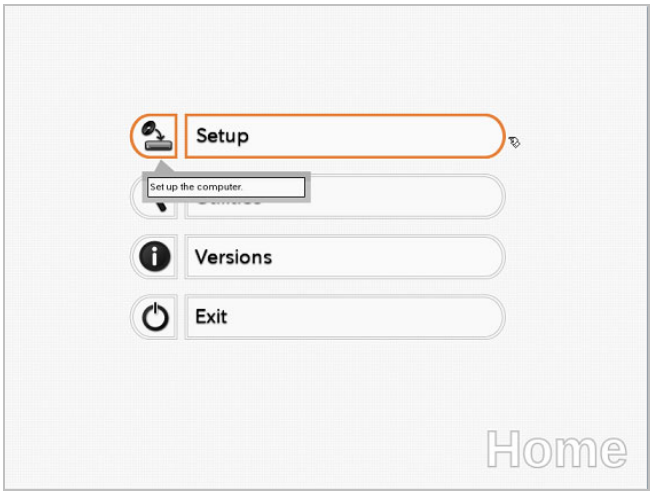


The server starts from EXPRESSBUILDER.



4. Select **English** on the language selection window, and then click [OK].

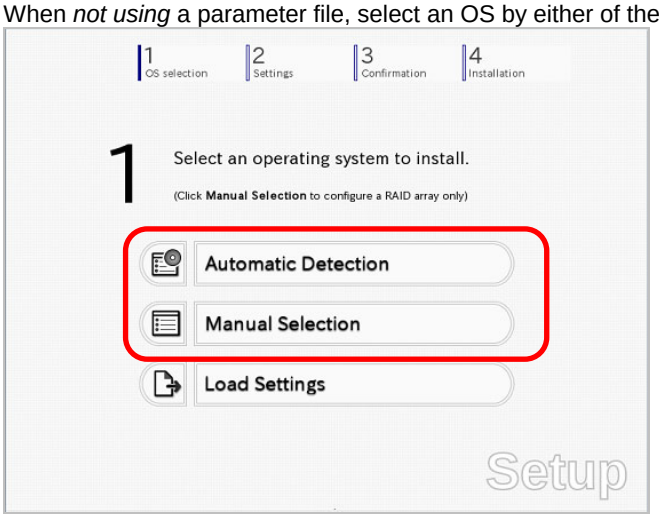
5. Click **Setup**.



6. On the **OS selection** menu, select the OS to install or specify the parameter file.
   ☐ When not using parameter file : Go to Step 7.
   ☐ When using a parameter file : Go to Step 8.

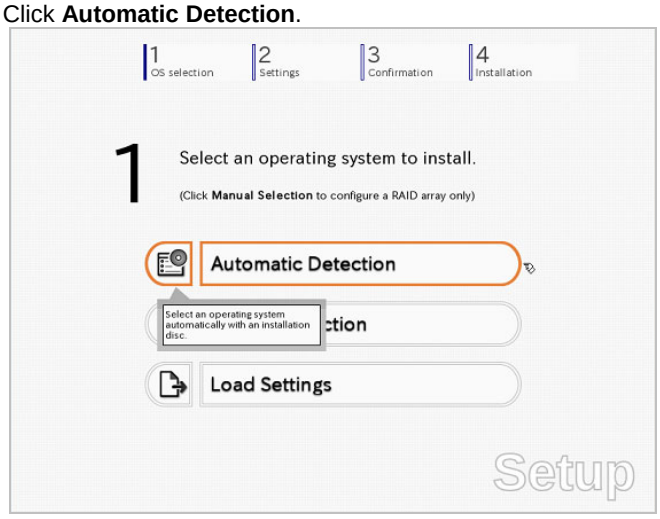
Note When setting up again, parameter input via the wizard can be omitted by loading the saved parameter file.

7. When *not using* a parameter file, select an OS by either of the following two ways:



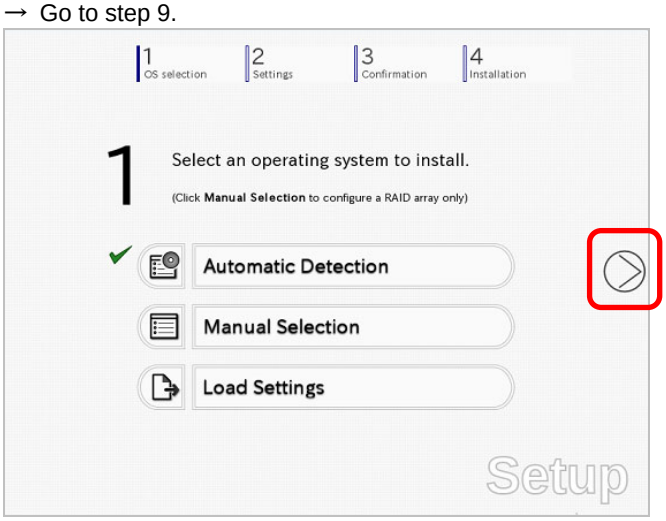
To automatically detect the OS on the OS installation media:

(1) Click **Automatic Detection**.



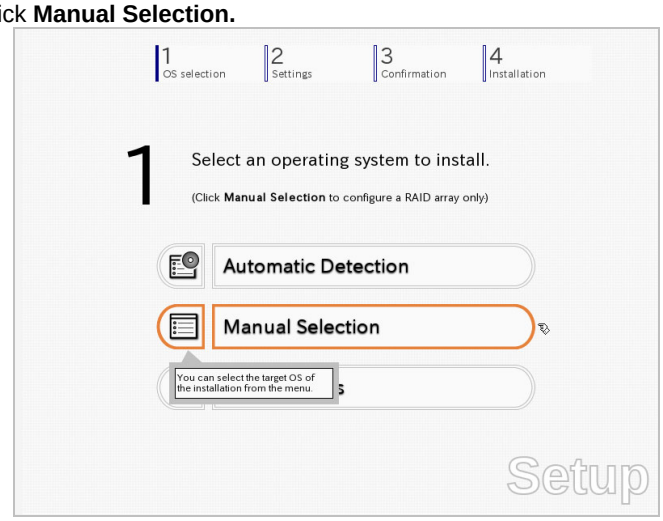
Insert the OS installation media, and then click **OK**.

(2) Click ▷ on the right side of the screen.
→ Go to step 9.

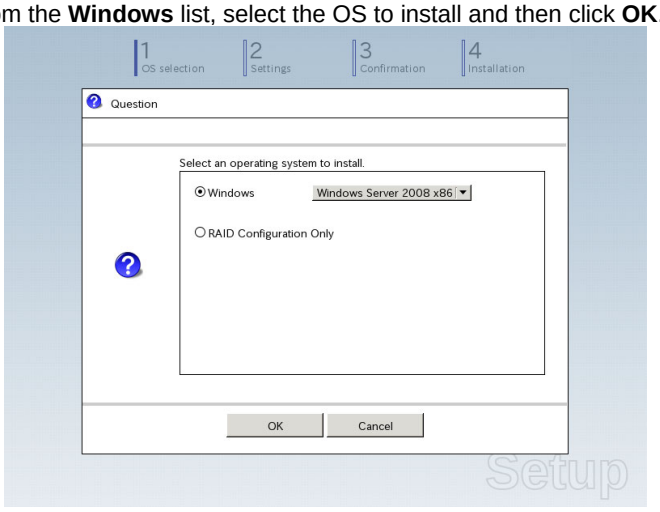


To select an OS from the menu:

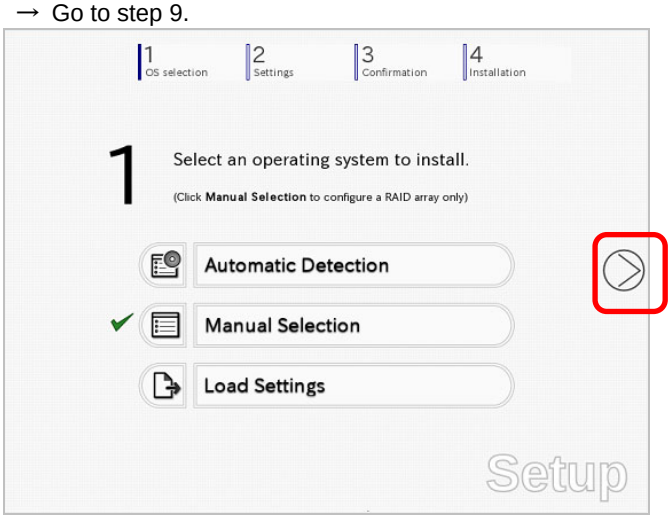
(1) Click **Manual Selection.**



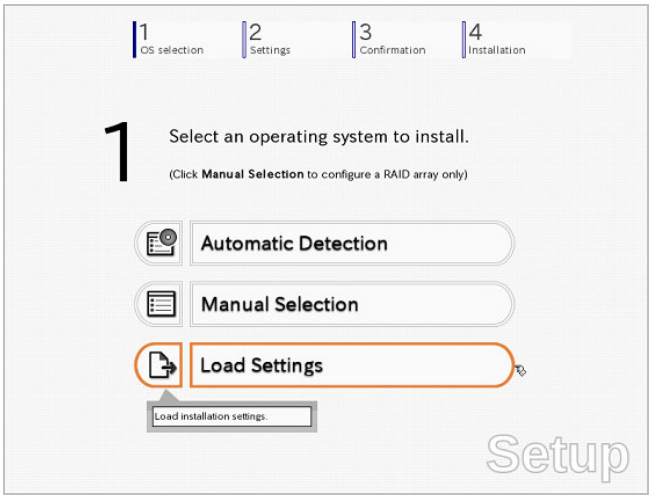
(2) From the **Windows** list, select the OS to install and then click **OK**.



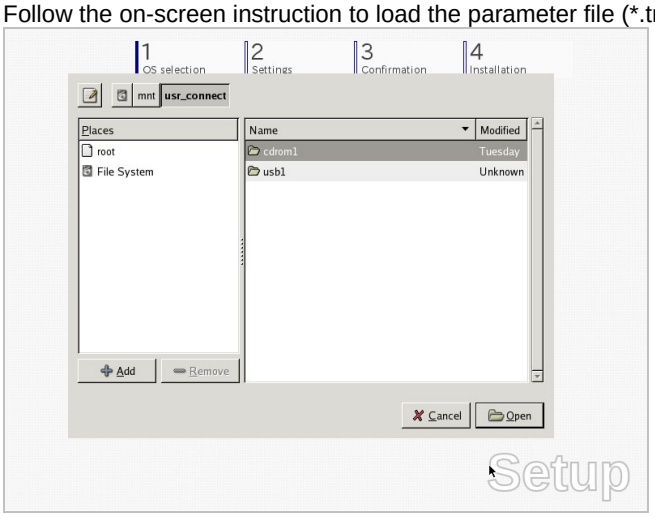
(3) Click ▷ on the right side of the screen.
→ Go to step 9.



8. When *using* the parameter file, click **Load Settings**.



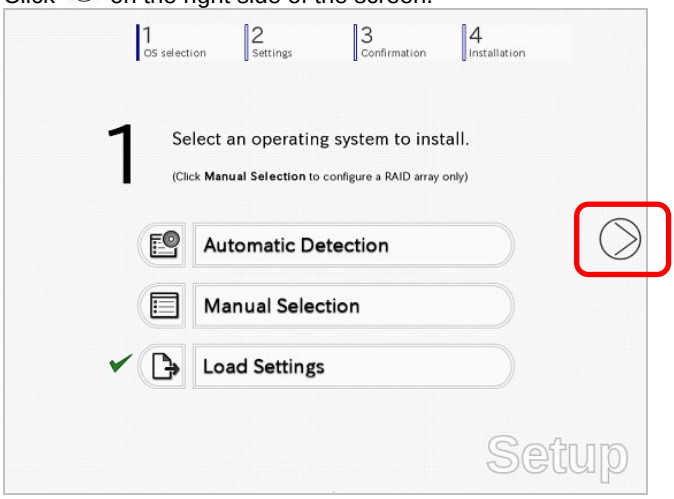
Follow the on-screen instruction to load the parameter file (*.tre).



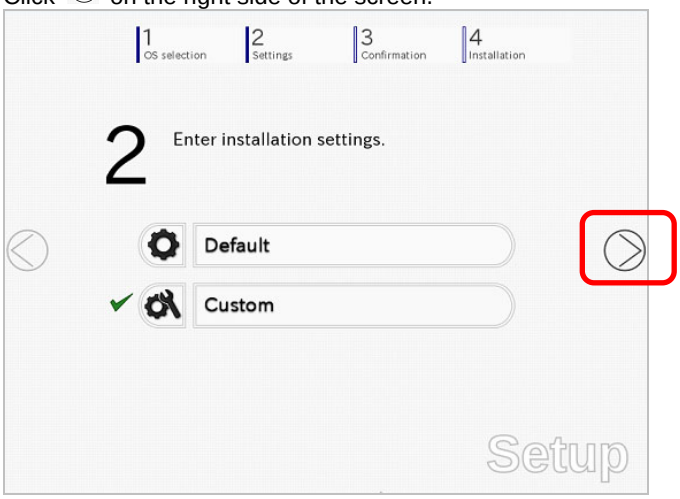
Tips

For the removable media in which the parameter file is saved, see "**/mnt/usr_connect/usb***" (* indicates a number).

Click ▷ on the right side of the screen.



When the parameter file is correctly loaded, the setting is determined.
Click **Custom** to check and modify the setting in the wizard.
Click ▷ on the right side of the screen.

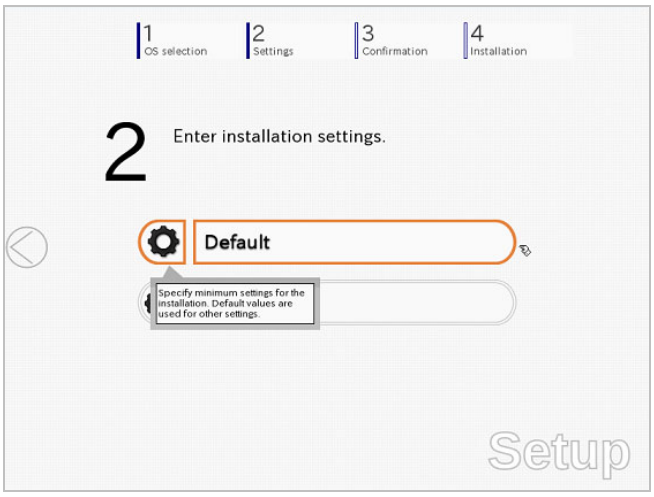


→ Go to step 10.

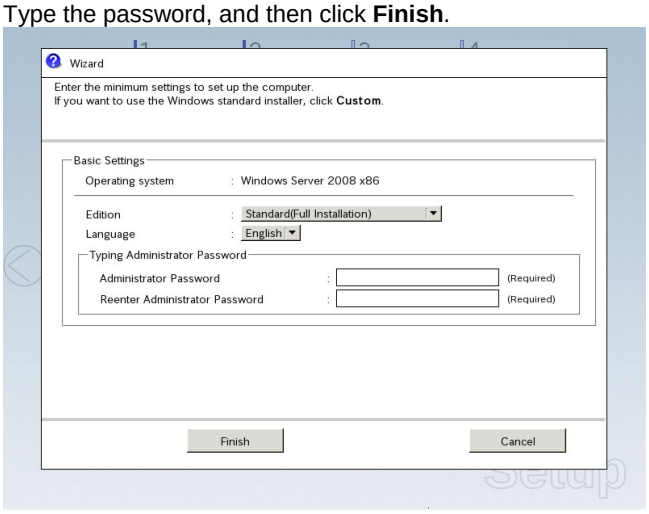
9. Specify the setup parameters by using either of the following methods:

Use Default:

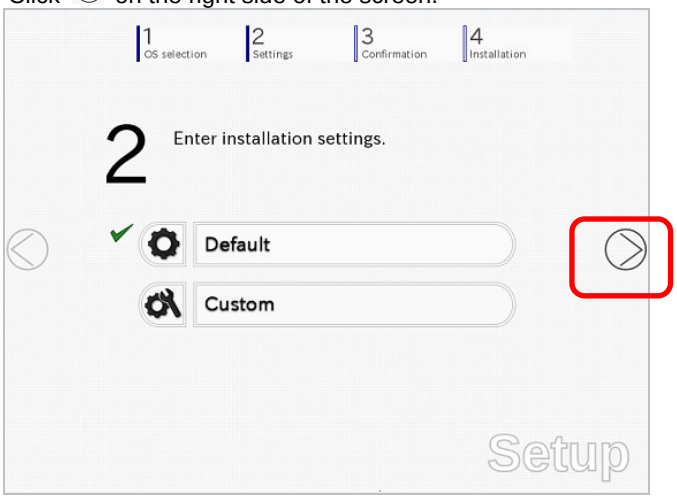
(1) Click **Default.**



(2) Select the edition of the OS to install from the **Edition** list. Type the password, and then click **Finish**.


Wizard
Enter the minimum settings to set up the computer.
If you want to use the Windows standard installer, click Custom.
Basic Settings
Operating system : Windows Server 2008 x86
Edition : Standard(Full Installation)
Language : English
Typing Administrator Password
Administrator Password : (Required)
Reenter Administrator Password : (Required)
Finish
Cancel
Setup

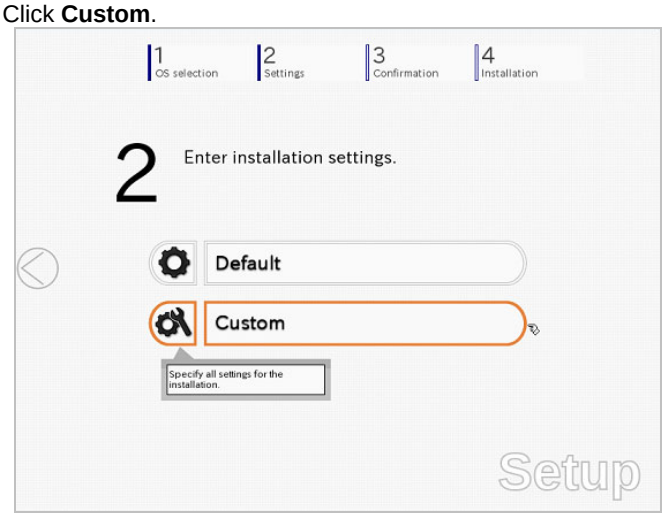
(3) Click ⓒ on the right side of the screen.



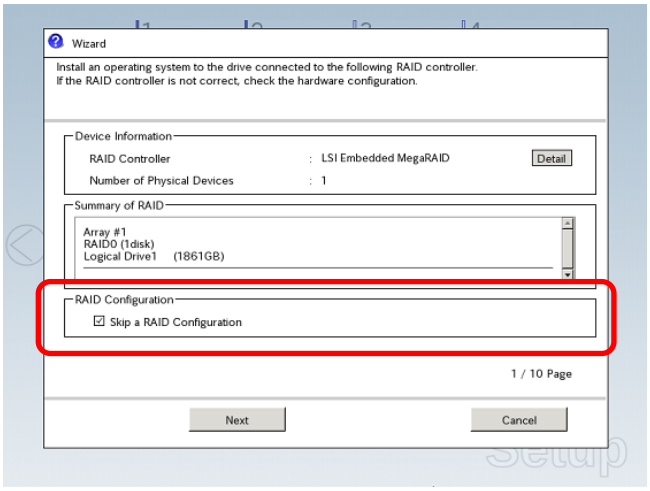
→ Go to step 10.

Use Custom:

(1) Click **Custom**.



(2) Use this menu to configure the RAID system with the RAID controller detected automatically.



When creating new logical drives

With the **Skip a RAID Configuration** check box cleared, click **Next**. Set up the logical drives according to the wizard.

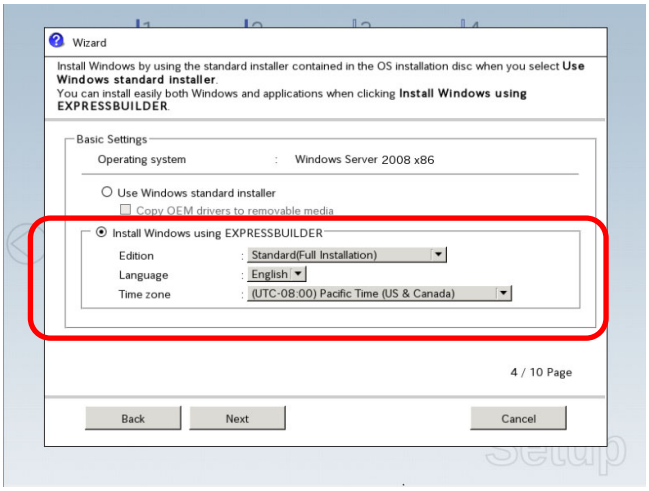
Important **If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.**

When skipping the creation of new logical drives

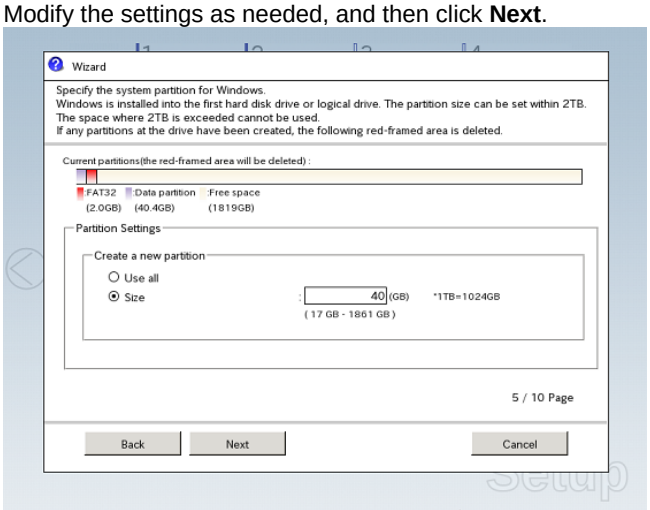
Select the **Skip a RAID Configuration** check box, and then click **Next**.

(3) Check the settings specified for **Basic Settings**.

Select [Install Windows using EXPRESSBUILDER], modify the settings as needed, and then click **Next**.


Wizard
Install Windows by using the standard installer contained in the OS installation disc when you select Use Windows standard installer.
You can install easily both Windows and applications when clicking Install Windows using EXPRESSBUILDER.
Basic Settings
Operating system : Windows Server 2008 x86
Use Windows standard installer
Copy OEM drivers to removable media
Install Windows using EXPRESSBUILDER
Edition : Standard(Full Installation)
Language : English
Time zone : (UTC-08:00) Pacific Time (US & Canada)
4 / 10 Page
Back
Next
Cancel

(4) Check the settings specified for **Partition Settings**.
Modify the settings as needed, and then click **Next**.


Wizard
Specify the system partition for Windows.
Windows is installed into the first hard disk drive or logical drive. The partition size can be set within 2TB.
The space where 2TB is exceeded cannot be used.
If any partitions at the drive have been created, the following red-framed area is deleted.
Current partitions(the red-framed area will be deleted) :
FAT32 (2.0GB)
Data partition (40.4GB)
Free space (1819GB)
Partition Settings
Create a new partition
Use all
Size : 40 (GB) *1TB=1024GB
(17 GB - 1861 GB)
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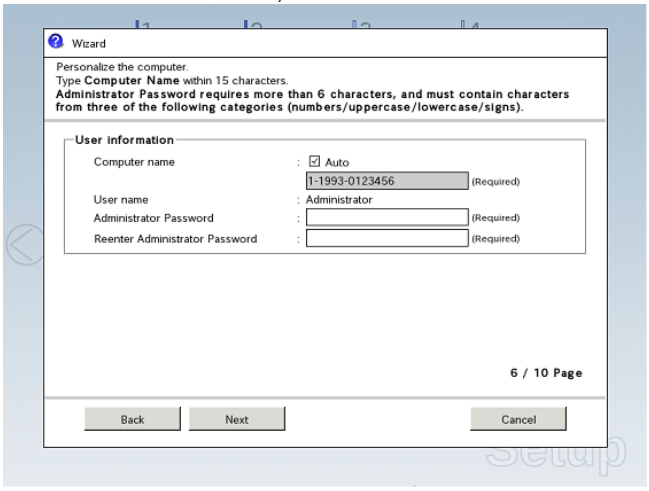
Important

- **Backing up user data, as needed, is recommended.**
- **Partition size**
  - **Specify a partition size larger than the minimum required for installing the operating system. (Refer to *Chapter 1 (5.1 Before Starting Setup)*.)**
  - **The maximum partition size is 2,097,152 MB.**
- **If you select *Create a new partition* under *Partition Settings*, the entire contents of the hard disk drive will be deleted.**

(5) Enter the user information, and then click **Next**.


Wizard
Personalize the computer.
Type Computer Name within 15 characters.
Administrator Password requires more than 6 characters, and must contain characters from three of the following categories (numbers/uppercase/lowercase/signs).
User information
Computer name : Auto
1-1993-0123456 (Required)
User name : Administrator
Administrator Password : (Required)
Reenter Administrator Password : (Required)
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Next
Cancel

Note

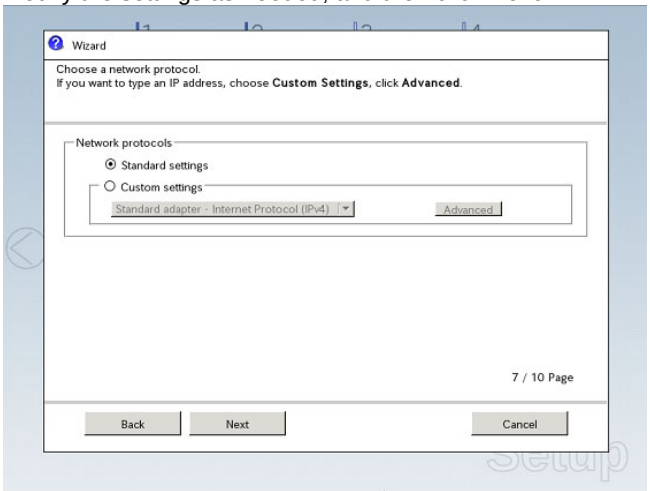
Computer name and Administrator Password are required parameters.
Enter Administrator Password that satisfies the following conditions:

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

Tips

- The Computer name has been assigned by automatic assignment function. If you need to assign another computer name, remove the checkmark from "Auto", and enter the desired computer name.
- If a parameter file is used for setup or if you return to a previous screen, •••••• is displayed in the Administrator password and Reenter Administrator password text boxes.

(6) Check the settings specified for **Network Protocols**.
Modify the settings as needed, and then click **Next**.



Tips

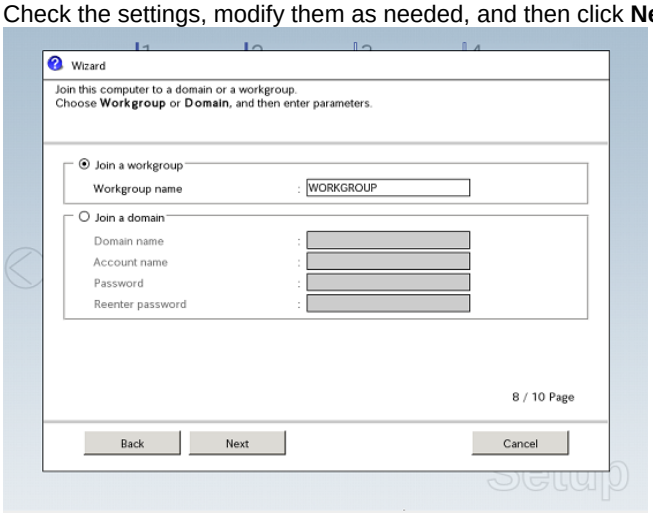
The order of entry in **Custom settings** may differ from the numbering of LAN ports.

Note

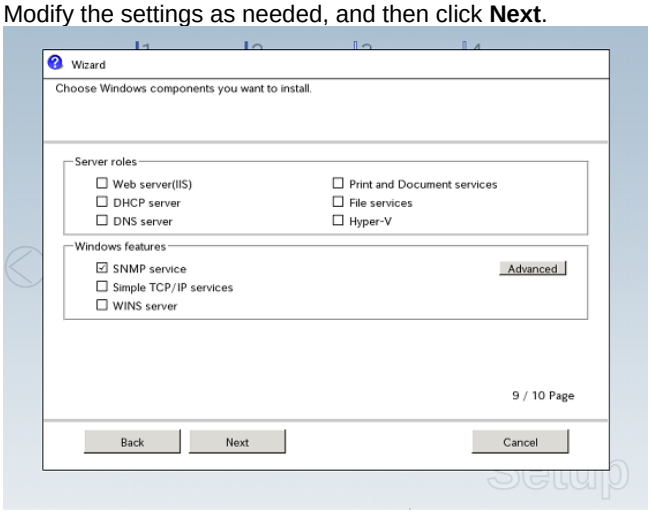
Even when an optional network board is connected, **Custom settings** lonly shows standard network boards.

After finishing Setup with EXPRESSBUILDER, specify the optional network settings again.

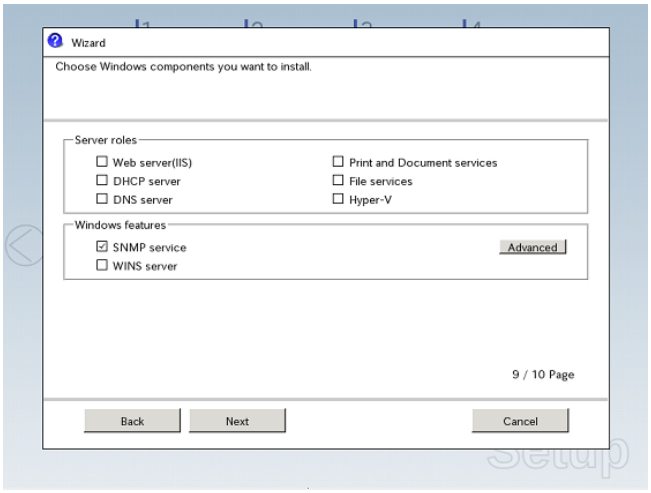
(7) Specify the domain or workgroup.
Check the settings, modify them as needed, and then click **Next**.



(8) Check the settings of Windows components.
Modify the settings as needed, and then click **Next**.

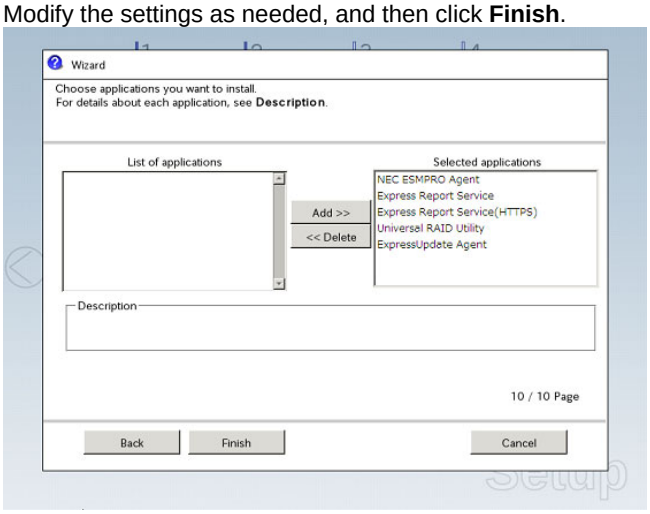


Full installations

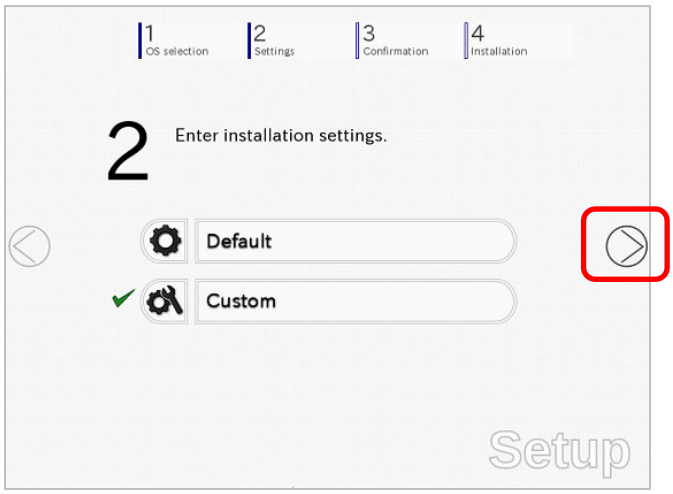


Server Core installations

(9) Check the settings of applications.
Modify the settings as needed, and then click **Finish**.

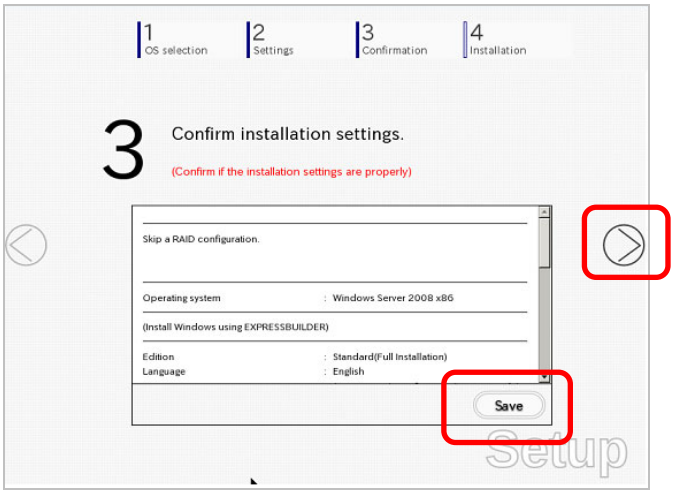


On the following screen, click ▷ on the right side of the screen.



10. Check the parameter settings.

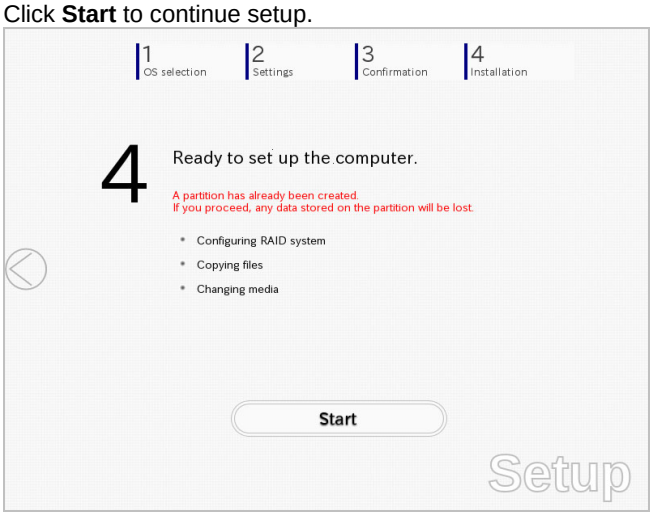
To save the settings, click **Save**.



Click ▷ on the right side of the screen.

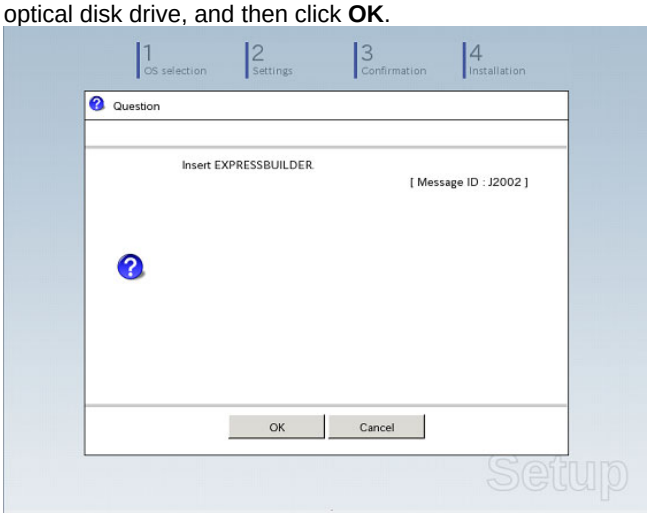
11. The setup process starts.

    Click **Start** to continue setup.

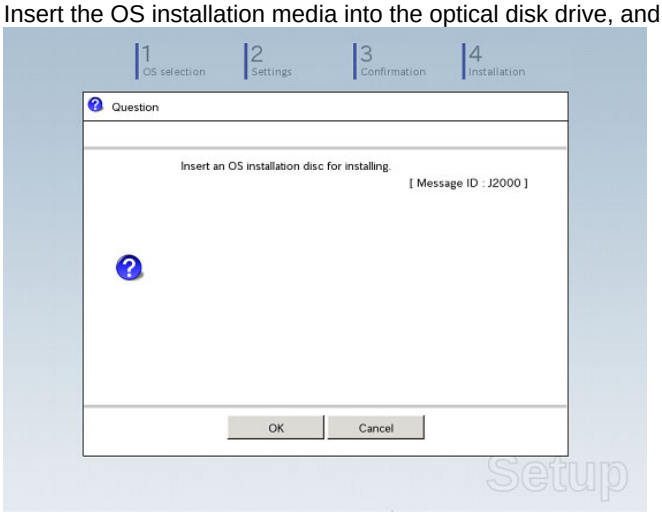


    If you need to suspend setup due to reasons such as backing up data, restart the setup process from the beginning.

12. If the server has started from the EXPRESSBUILDER DVD, insert the EXPRESSBUILDER disk into the optical disk drive, and then click **OK**.

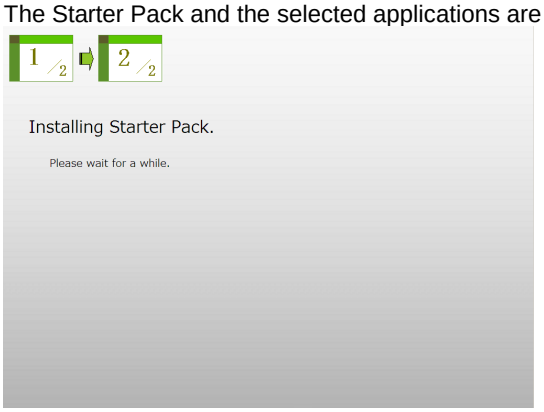


13. Insert the OS installation media into the optical disk drive, and then click **OK**.

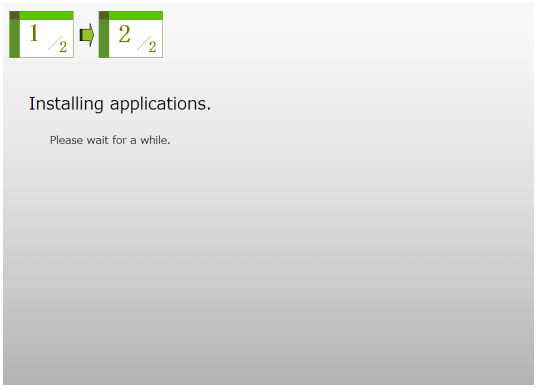


Windows Server 2008 is installed automatically.

14. The Starter Pack and the selected applications are automatically installed.

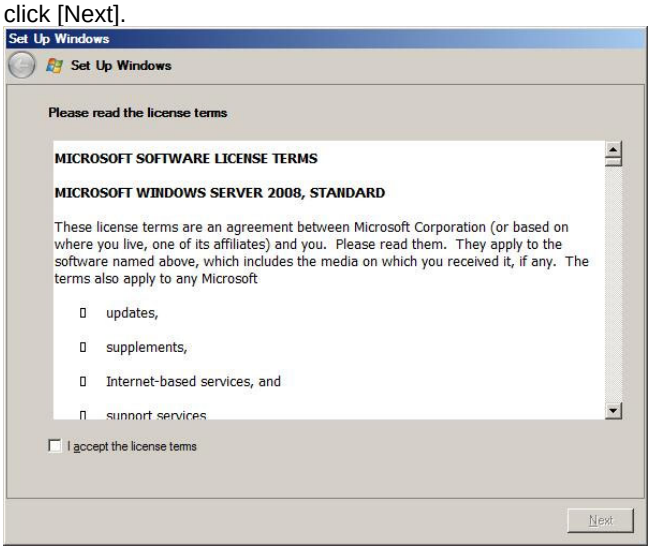


Screen displayed when Starter Pack is being installed

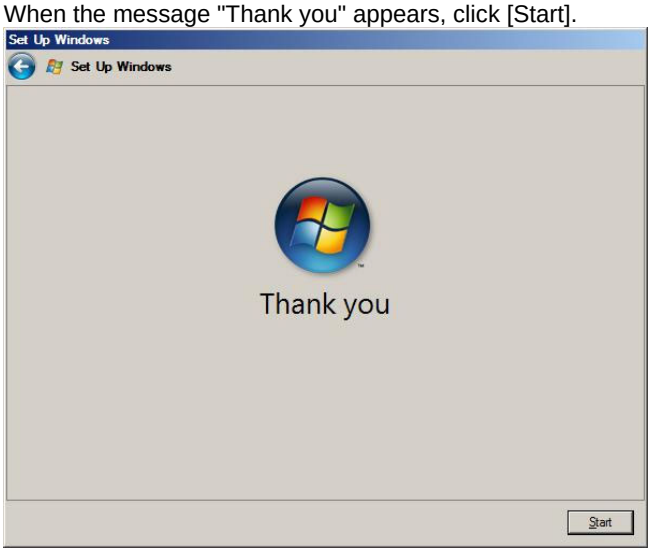


Screen displayed when an application is being installed

15. When the software license agreement window appears, select **I accept the license terms**, and then click [Next].


Set Up Windows
Set Up Windows
Please read the license terms
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT WINDOWS SERVER 2008, STANDARD
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft
updates,
supplements,
Internet-based services, and
support services
I accept the license terms
Next

16. When the message "Thank you" appears, click [Start].



Tips It may take several minutes until the logon window appears. Wait until it appears, even though nothing changes on the screen.

17. When the following message appears, press <Ctrl> + <Alt> + <Del> keys.

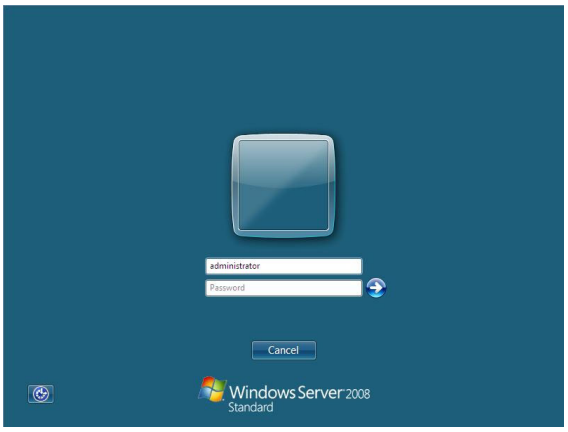
Full installations:

When the following screen appears, enter your password into the text box, and then click .

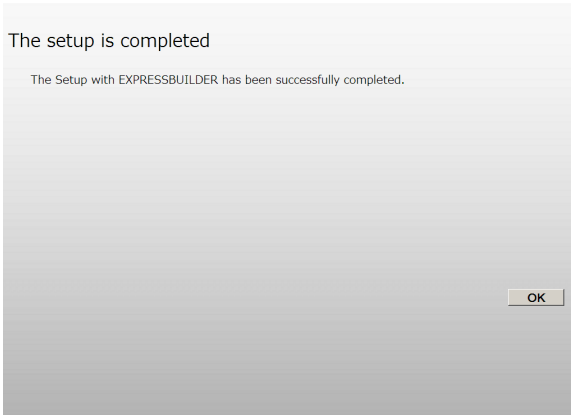
Server Core installations:

When the following screen appears, click **Other User**.

When the following screen appears, enter `administrator` into **User** text box and the specified password into **Password** text box, and then click .



18. Click **OK**.



19. Follow the instructions described in *Chapter 1 (5.5 Setting Up Device Drivers)* to set up the device drivers supplied with this server as standard.

20. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.

21. Apply Service Pack as needed according to *Chapter 1 (5.8 Applying Service Pack)*.

22. Execute setup by following the instructions described in *Chapter 1 (6. Setup for Solving Problems)*.

Setup with EXPRESSBUILDER is now complete.

5.3 Setup with Windows Standard Installer

This section describes how to install Windows with Windows Standard Installer.

This feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following "*User's Guide*".

Important

Setup with Windows standard Installer may delete all data of the hard disk drive depending on the settings. Pay attention to input parameters. You must be especially careful when configuring the following:

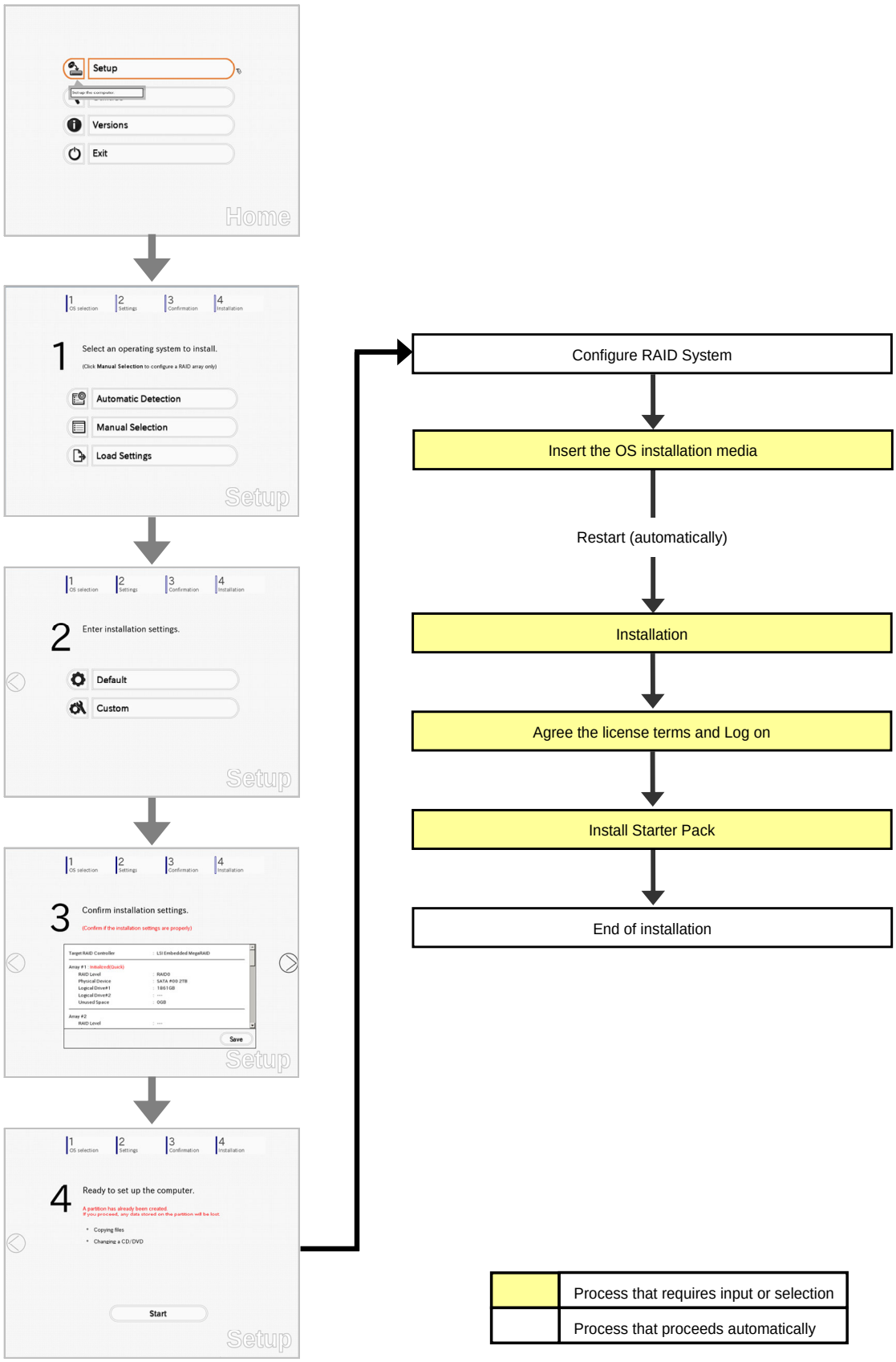
– RAID settings

Backing up user data, as needed, is recommended.

Tips

- Setup with Windows Standard Installer allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, refer to *7. Windows OS Parameter File*.

5.3.1 Setup flow



5.3.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

- Either of the following OS installation media
  - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
  - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2008 DVD-ROM*)
- **First Steps Guide**
- Either of the following EXPRESSBUILDER
  - **EXPRESSBUILDER DVD**
  - **Internal Flash Memory** (optional)
- Prepare if needed:
  - **Removable media for Windows OS parameter file**
  - **Service Pack**
    (If the OS installation media contains Service Pack 1, you need not apply the service pack again.)

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory. EXPRESSBUILDER can be run from Internal Flash Memory if it is installed in the server.
- If you are using a server with Internal Flash Memory installed, you can install the OS without using the EXPRESSBUILDER DVD.

5.3.3 Setup procedure

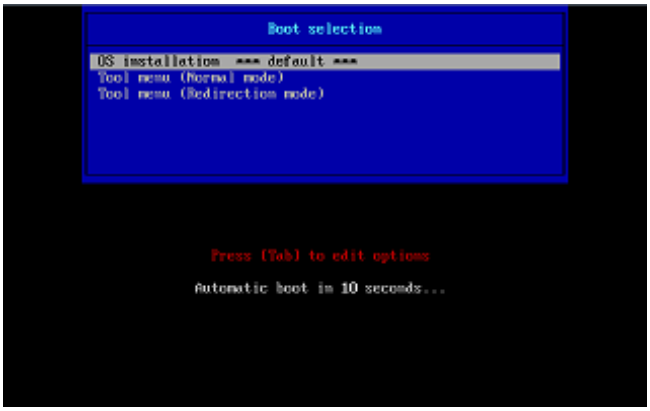
Note

Before starting setup, refer to *Chapter 1 (5.1 Before Starting Setup)*. It describes how to make partitions.

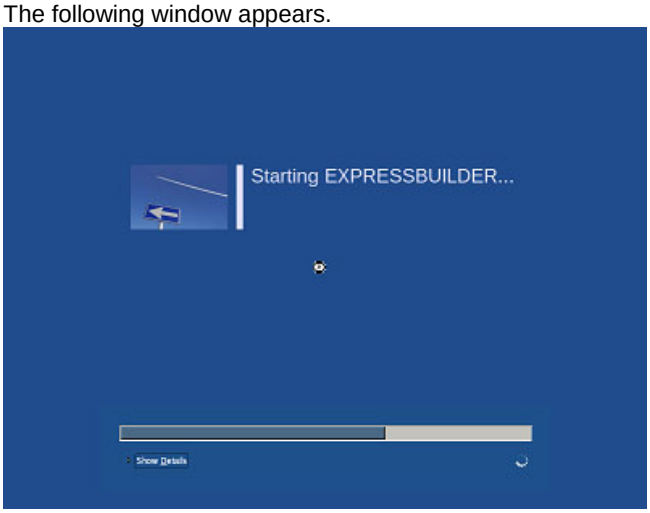
1. Turn peripheral device (such as a display) power on, and then turn the server power on.

2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.

3. Select **Os installation *** default *****.
   You will automatically advance to step 4, with no need for further input.


Boot selection
OS installation *** default ***
Tool menu (Normal mode)
Tool menu (Redirection mode)
Press (Tab) to edit options
Automatic boot in 10 seconds...

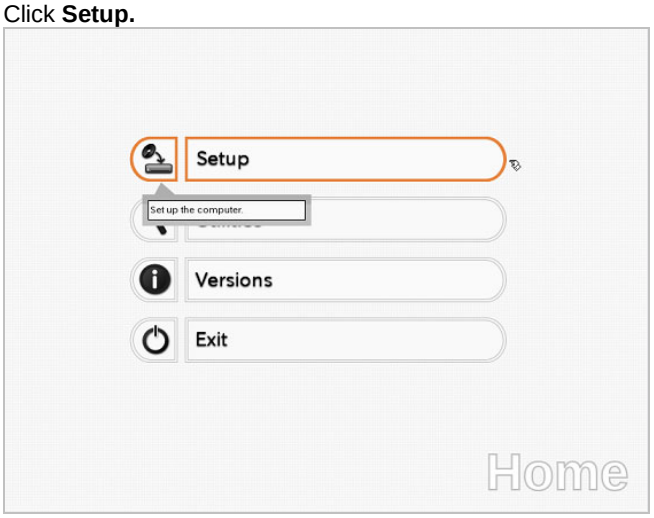
The following window appears.



The server starts from EXPRESSBUILDER.

4. Select **English** on the language selection window, and then click [OK].

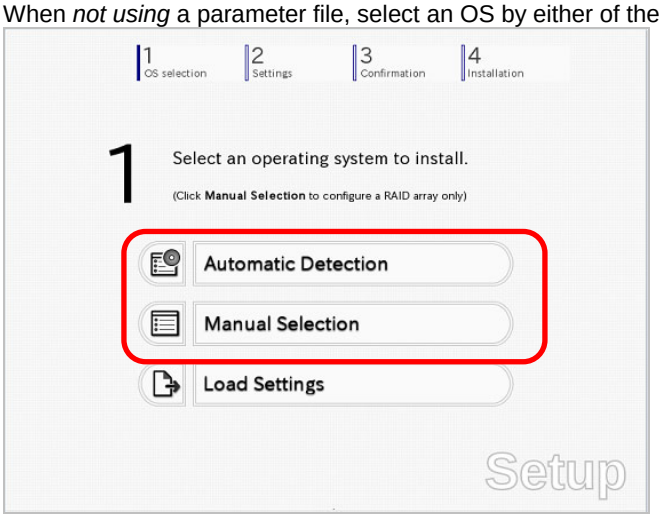
5. Click **Setup.**



6. On the **OS selection** menu, select the OS to install or specify the parameter file.
   ☐ When not using parameter file: Go to Step 7.
   ☐ When using a parameter file: Go to Step 8.

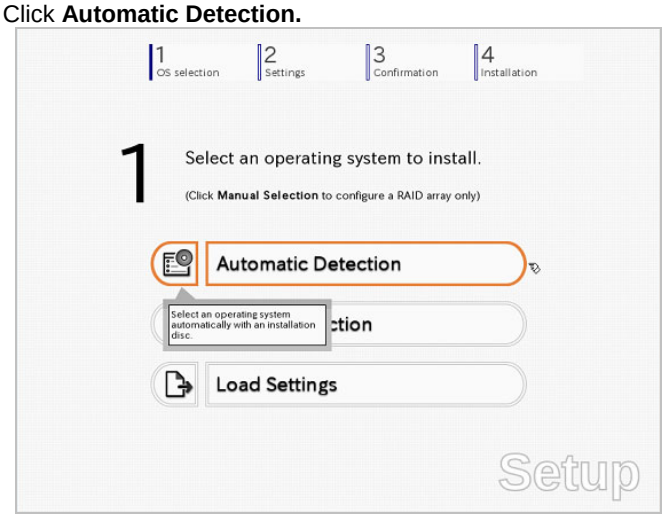
Note When setting up again, an already saved parameter file can be read, so that you can skip inputting parameters in the wizard.

7. When *not using* a parameter file, select an OS by either of the following two ways:



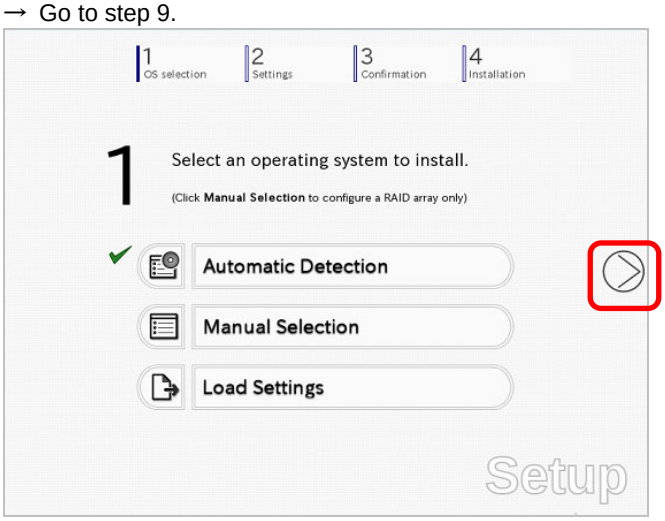
To automatically detect the OS on the OS installation media:

(1) Click **Automatic Detection.**



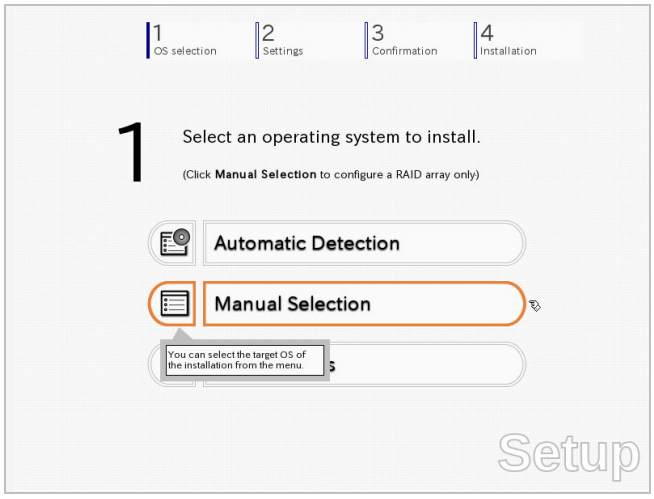
Insert the OS installation media, and then click **OK**.

(2) Click ▷ on the right side of the screen.
→ Go to step 9.

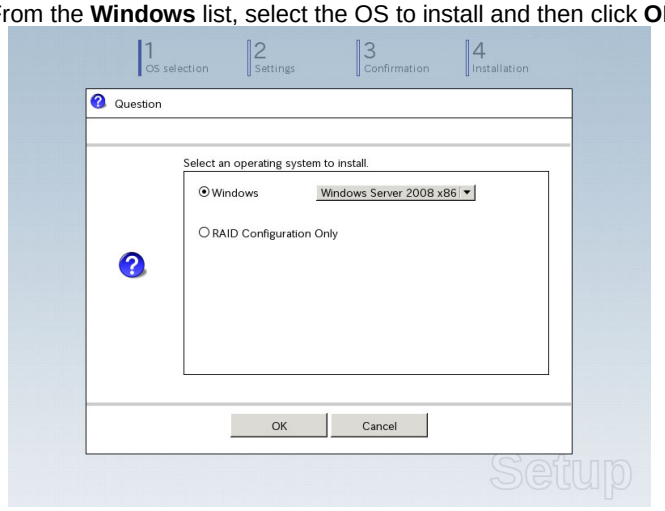


To select an OS from the menu:

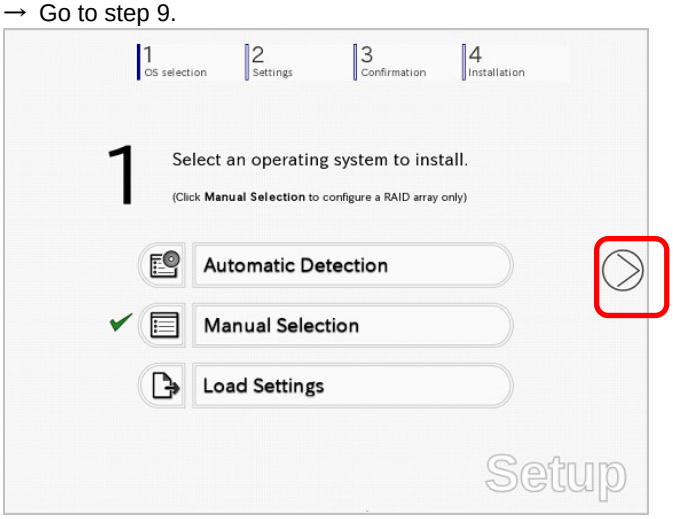
(1) Click **Manual Selection.**



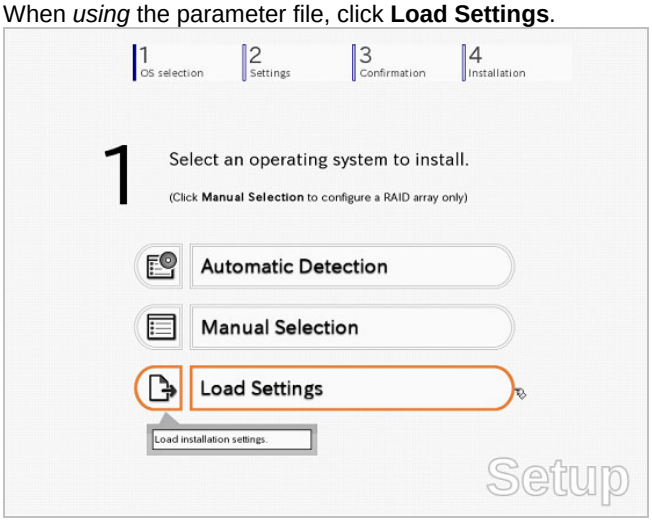
(2) From the **Windows** list, select the OS to install and then click **OK**.



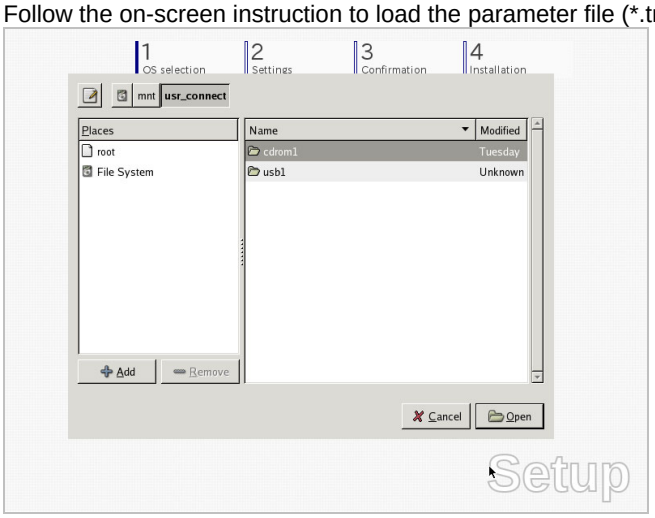
(3) Click ▷ on the right side of the screen.
→ Go to step 9.



8. When *using* the parameter file, click **Load Settings**.



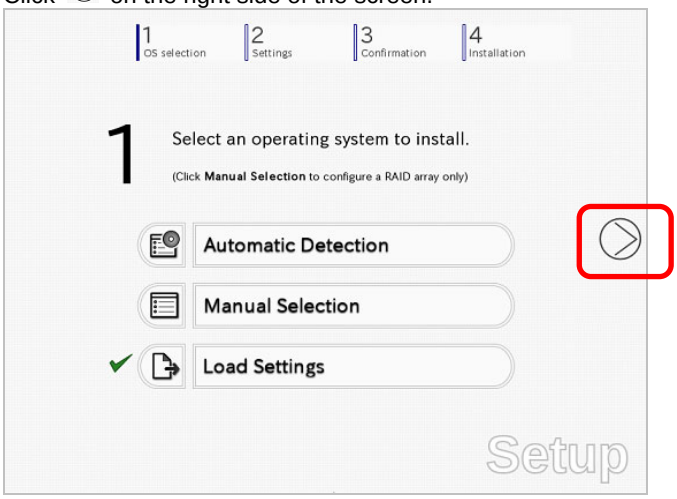
Follow the on-screen instruction to load the parameter file (*.tre).



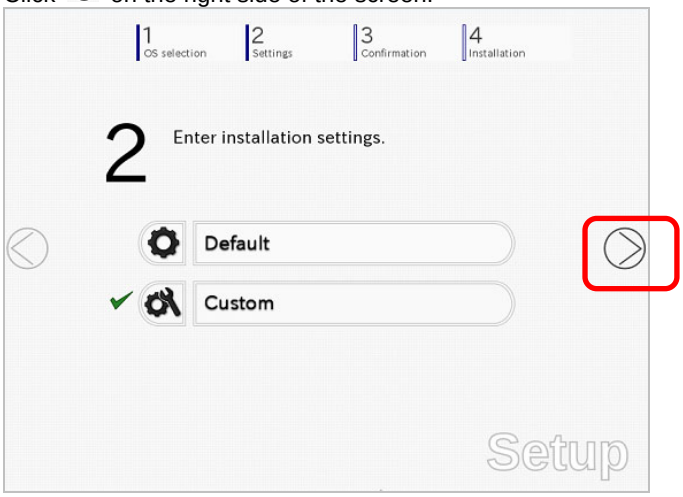
Tips

For the removable media in which the parameter file is saved, see "**/mnt/usr_connect/usb***" (* indicates a number).

Click ▷ on the right side of the screen.

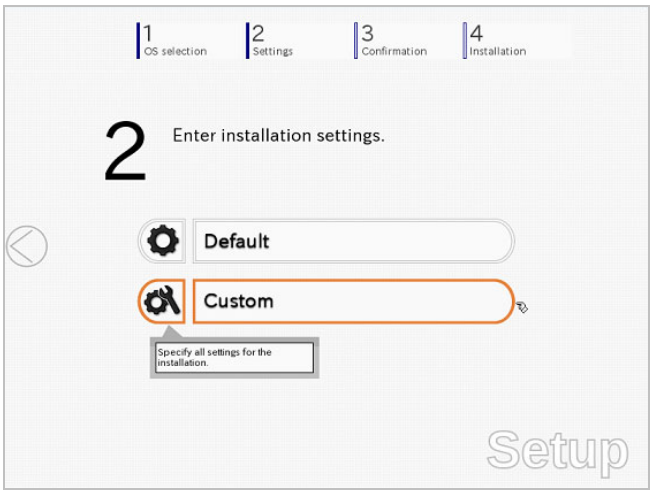


When the parameter file is correctly loaded, the setting is determined.
Click **Custom** to check and modify the setting in the wizard.
Click ▷ on the right side of the screen.

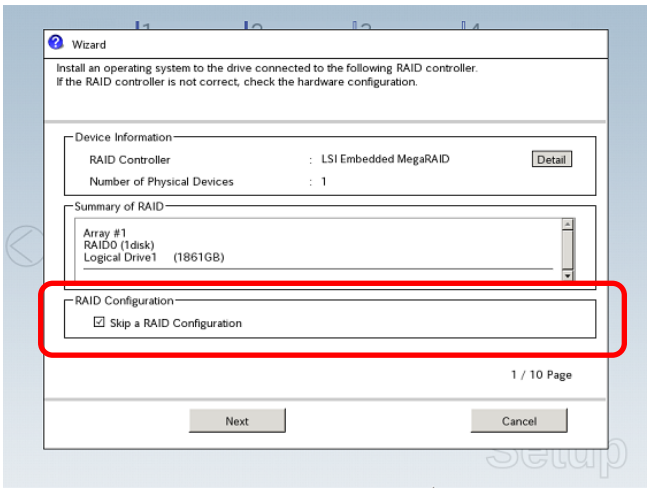


→ Go to step 10.

9. Click **Custom.**



(1) Use this menu to configure the RAID system with the RAID controller detected automatically.



When creating new logical drives

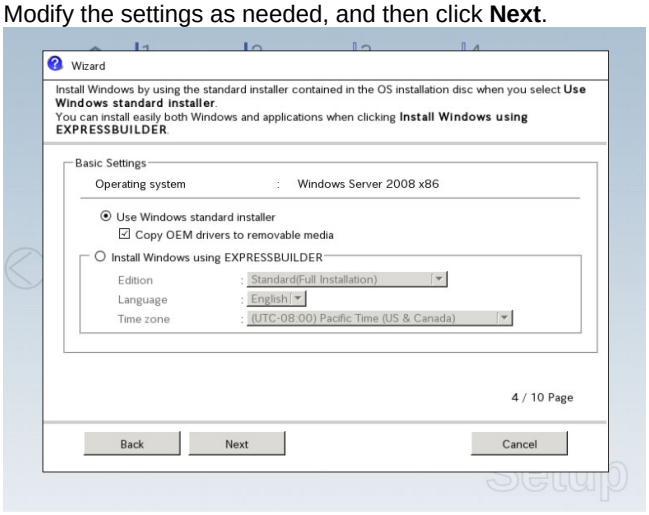
With the **Skip a RAID Configuration** check box cleared, click **Next**. Set up the logical drives according to the wizard.

Important **If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.**

When skipping the creation of new logical drives

Select the **Skip a RAID Configuration** check box, and then click **Next**.

(2) Check the settings specified for **Basic Settings**.
Modify the settings as needed, and then click **Next**.


Wizard
Install Windows by using the standard installer contained in the OS installation disc when you select Use Windows standard installer.
You can install easily both Windows and applications when clicking Install Windows using EXPRESSBUILDER.
Basic Settings
Operating system : Windows Server 2008 x86
Use Windows standard installer
Copy OEM drivers to removable media
Install Windows using EXPRESSBUILDER
Edition : Standard(Full Installation)
Language : English
Time zone : (UTC-08:00) Pacific Time (US & Canada)
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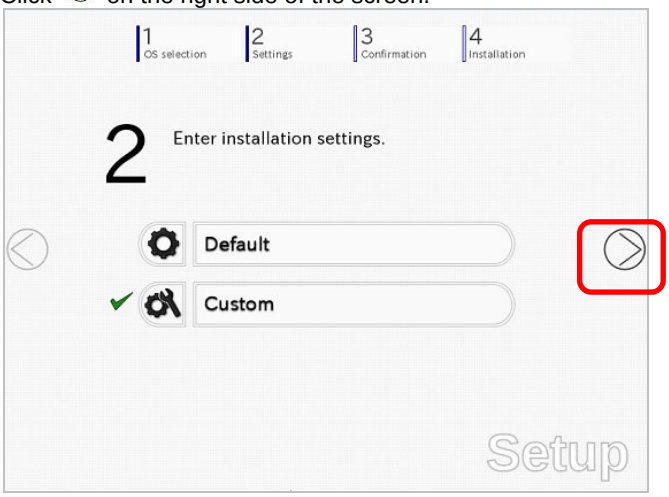
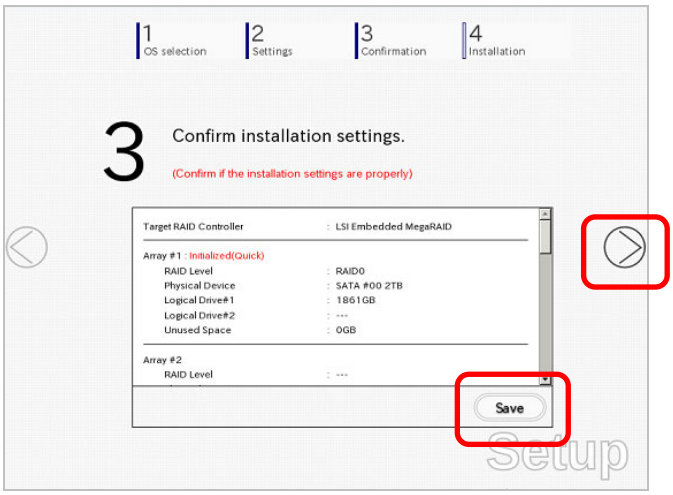
Back
Next
Cancel

(3) Click ▷ on the right side of the screen.

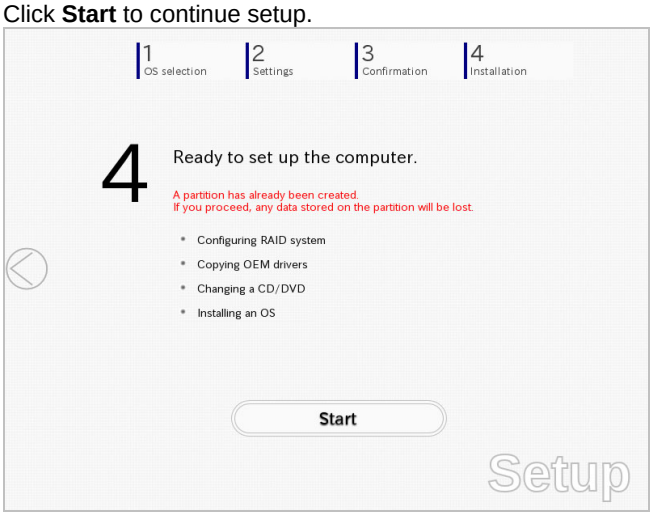


10. Check the parameter settings.
To save the settings, click **Save**.



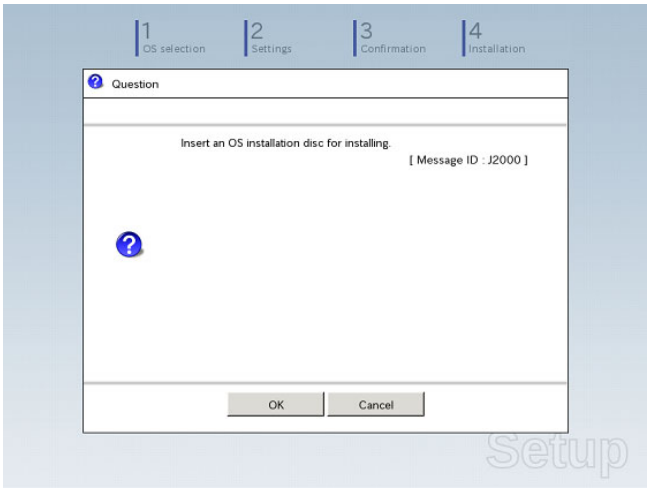
Click ▷ on the right side of the screen.

11. The setup process starts.
Click **Start** to continue setup.



If you need to suspend setup due to reasons such as backing up data, restart the setup process from the beginning.

12. When the following screen appears, insert the OS installation media into the disk drive, and then click **OK**.



13. The server reboots automatically.
If you use Internal Flash Memory, press <F3> key when the following message appears during POST.

```
Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network
```

Note Since the OS installation media is set in the optical disk drive in Step 12, boot the system from the optical disk drive having higher boot priority, not from Internal Flash Memory.

14. Run from the OS installation media.
If a bootable operating system is already installed on the hard disk drive, press <Enter> key while the message "Press any key to boot from CD or DVD…" is displayed on the top of the screen.

The boot sequence proceeds and the message "Windows is loading files…" appears.

Note If “Windows is loading files...” message does not appear, <Enter> key was not pressed correctly. Reboot and retry.

This step is unnecessary if no bootable operating system exists.

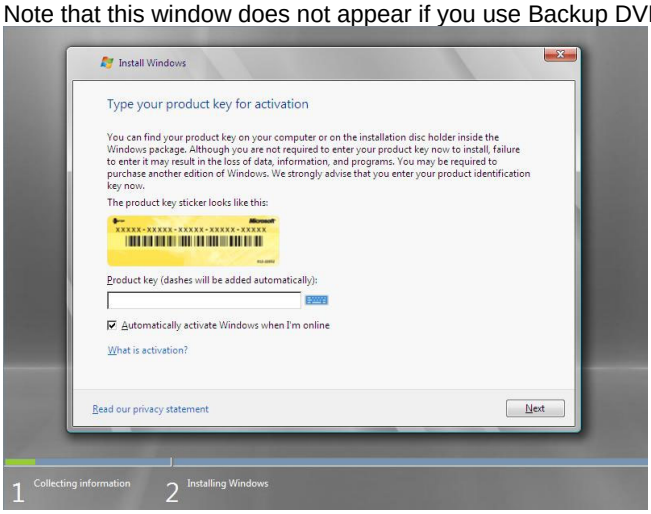
15. When the following window appears, click [Next] at default settings.

Install Windows
Windows Server 2008
Language to install: English
Time and currency format: English (United States)
Keyboard or input method: US
Enter your language and other preferences and click "Next" to continue.
Copyright © 2007 Microsoft Corporation. All rights reserved.
Next

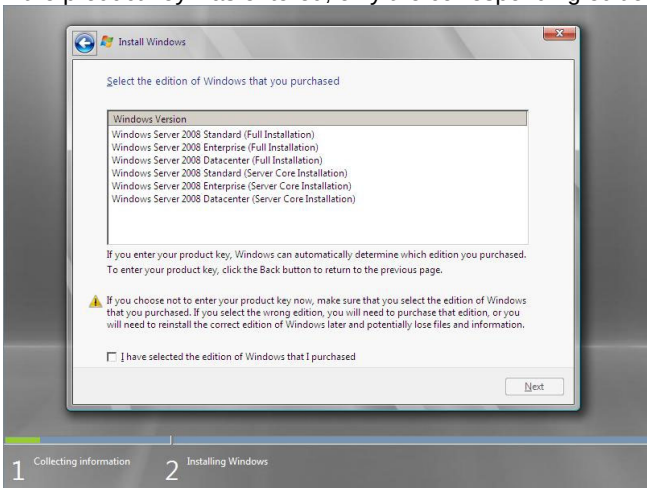
16. Click [Install Now].
Windows Server 2008 installation starts.

Install Windows
Windows Server 2008
Install now
What to know before installing Windows
Repair your computer
Copyright © 2007 Microsoft Corporation. All rights reserved.

17. When the following window appears, enter the product key and then click [Next].
Note that this window does not appear if you use Backup DVD-ROM for installation.

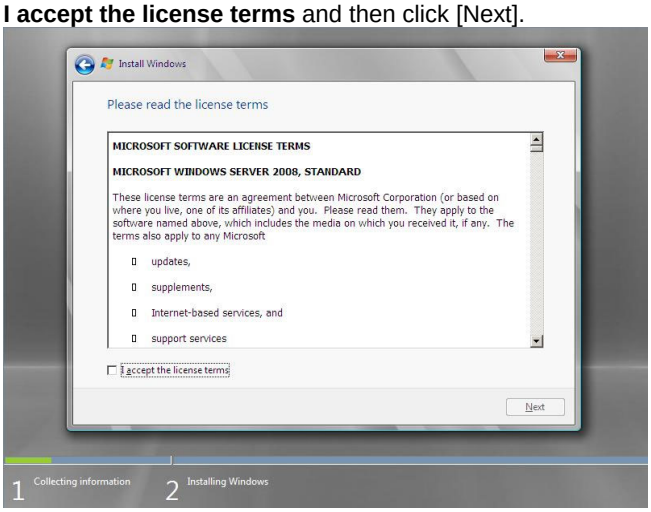

Install Windows
Type your product key for activation
You can find your product key on your computer or on the installation disc holder inside the Windows package. Although you are not required to enter your product key now to install, failure to enter it may result in the loss of data, information, and programs. You may be required to purchase another edition of Windows. We strongly advise that you enter your product identification key now.
The product key sticker looks like this:
Product key (dashes will be added automatically):
Automatically activate Windows when I'm online
What is activation?
Read our privacy statement
Next
1 Collecting information
2 Installing Windows

18. When the following window appears, select the Windows edition you have purchased.
Select **I have selected the edition of Windows that I purchased** check box, and then click [Next].
If the product key was entered, only the corresponding editions are displayed.

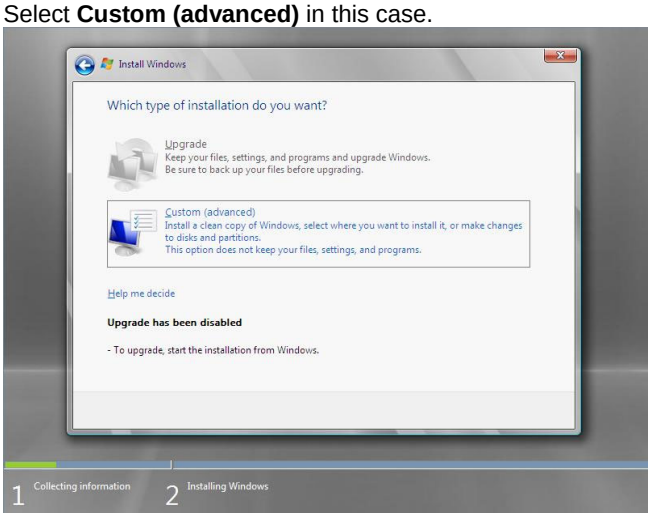

Install Windows
Select the edition of Windows that you purchased
Windows Version
Windows Server 2008 Standard (Full Installation)
Windows Server 2008 Enterprise (Full Installation)
Windows Server 2008 Datacenter (Full Installation)
Windows Server 2008 Standard (Server Core Installation)
Windows Server 2008 Enterprise (Server Core Installation)
Windows Server 2008 Datacenter (Server Core Installation)
If you enter your product key, Windows can automatically determine which edition you purchased. To enter your product key, click the Back button to return to the previous page.
If you choose not to enter your product key now, make sure that you select the edition of Windows that you purchased. If you select the wrong edition, you will need to purchase that edition, or you will need to reinstall the correct edition of Windows later and potentially lose files and information.
I have selected the edition of Windows that I purchased
Next
1 Collecting information
2 Installing Windows

Tips The Windows versions that appear on the screen differ depending on the OS installation media used.

19. When the following window appears, confirm the content of the license agreement. If you agree, select **I accept the license terms** and then click [Next].


Install Windows
Please read the license terms
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT WINDOWS SERVER 2008, STANDARD
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft
updates,
supplements,
Internet-based services, and
support services
I accept the license terms
Next
1 Collecting information
2 Installing Windows

20. When the following message appears, select the installation type.
Select **Custom (advanced)** in this case.

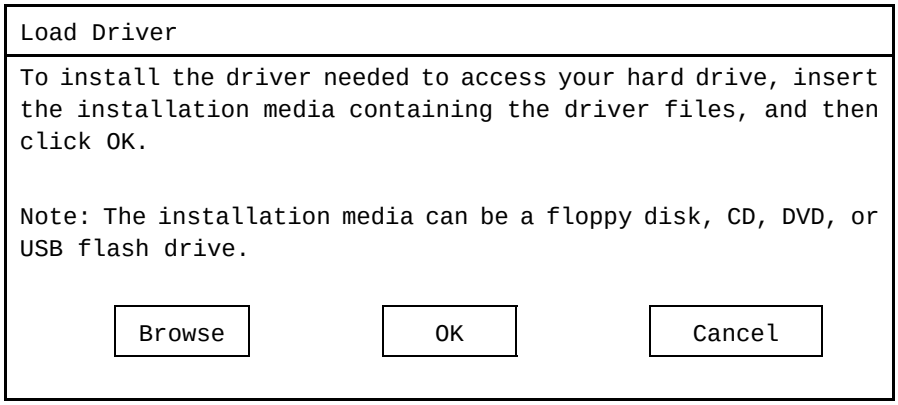

Install Windows
Which type of installation do you want?
Upgrade
Keep your files, settings, and programs and upgrade Windows.
Be sure to back up your files before upgrading.
Custom (advanced)
Install a clean copy of Windows, select where you want to install it, or make changes to disks and partitions.
This option does not keep your files, settings, and programs.
Help me decide
Upgrade has been disabled
- To upgrade, start the installation from Windows.
1 Collecting information
2 Installing Windows

21. "Where do you want to install Windows?" window appears.

Note If not using a RAID Controller, go to step 24.

Click **Load Driver**.

If the following message appears, replace the OS installation media and EXPRESSBUILDER DVD in the optical disk drive, and then click [Browse]. Next, go to step 22.


Load Driver
To install the driver needed to access your hard drive, insert the installation media containing the driver files, and then click OK.
Note: The installation media can be a floppy disk, CD, DVD, or USB flash drive.
Browse
OK
Cancel

Tips

- If using Internal Flash Memory, you do not need to remove the OS installation media.
- At this time, the message "The Installation media can be a floppy disk, CD, DVD, or USB flash drive." appears on the screen, use the supplied EXPRESSBUILDER DVD or Internal Flash Memory.

22. Specify one of the following locations, and then click [OK].
(When using EXPRESSBUILDER, select the optical disk drive. When using Internal Flash Memory, select the volume of INTER-FLASH.)

When using the N8103-172/173/174 RAID Controller:

- Windows Server 2008 64-bit Edition
  `\002\win\winnt\oemfd\ws2008x64\megasas2`
- Windows Server 2008 32-bit Edition
  `\002\win\winnt\oemfd\ws2008\megasas2`

When using the N8103-168 RAID Controller:

- Windows Server 2008 64-bit Edition
  `\002\win\winnt\oemfd\ws2008x64\megasas2`
- Windows Server 2008 32-bit Edition
  `\002\win\winnt\oemfd\ws2008\megasas2`

23. Select the necessary driver from the driver list shown, and then click [Next].

When using the N8103-172/173/174 RAID Controller:
[LSI MegaRAID SAS 9272-8i]

When using the N8103-168 RAID Controller:
[LSI MegaRAID SAS 9265CV-8i]

Tips

When N8103-168 is used, the name of the RAID controller that appears on a screen is different from one that is showed on WebBIOS and Universal RAID Utility. But it is not a problem.

24. If you used EXPRESSBUILDER DVD, remove it and then insert the OS installation media.

25. Select the disk in which the partition will be created, and then click **Drive options (advanced)**
If a partition has already been created, go to step 28.

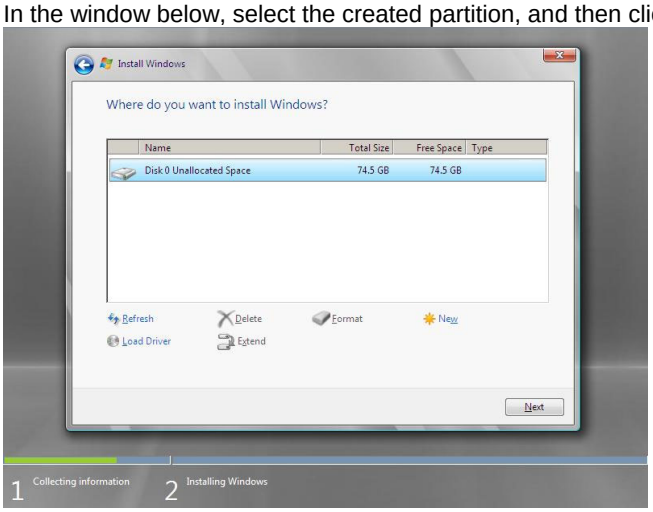
26. Click [New], enter the partition size into the size input box, and then click [Apply].

Note

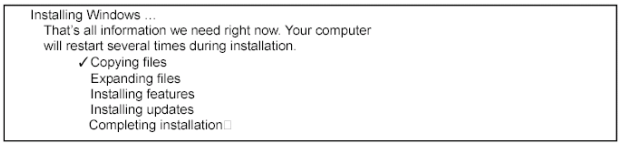
When installing the OS to a disk of over 2,097,152 MB (2 TB), the partition size can only be set to 2,097,152 MB or less.

27. Select the partition created in step 26, and then click [Format].

28. In the window below, select the created partition, and then click [Next].



When the following message appears, Windows installation starts automatically.


Installing Windows ...
That's all information we need right now. Your computer will restart several times during installation.
✓Copying files
Expanding files
Installing features
Installing updates
Completing installation

Tips

At this time, if EXPRESSBUILDER DVD is still in the optical disk drive, the message prompting you to replace it with an OS installation media appears. Remove EXPRESSBUILDER DVD and then insert the OS installation media.

29. The content displayed differs depending on what you selected in step 18. Confirm the following, and then proceed.

Full installations:

(1) After setup of Windows Server 2008 is completed, the following window appears, prompting you to change your password before logging on. Click [OK].

(2) Change your password, and then click the [ ] button.

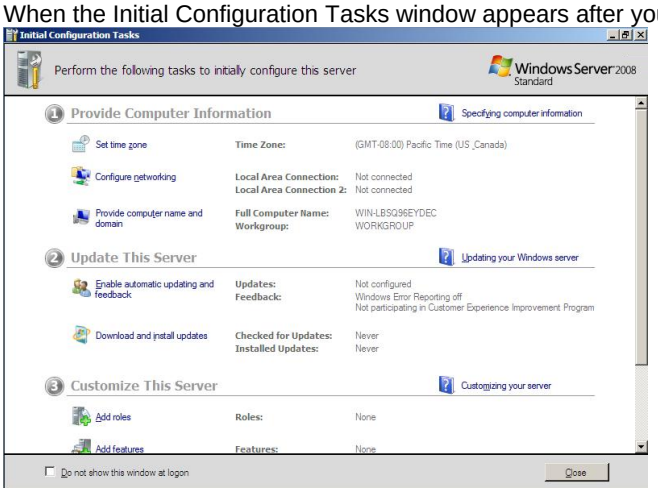
Tips

Passwords must fulfill the following requirements in Windows Server 2008.

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

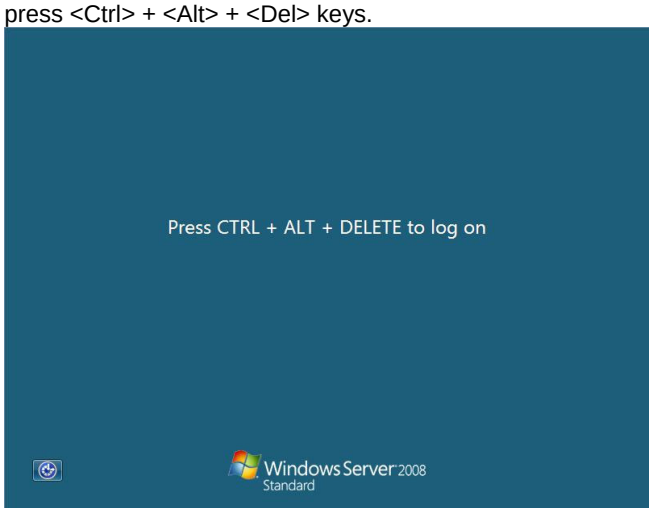
(3) When the following message appears, click [OK].

(4) When the Initial Configuration Tasks window appears after you log on, enter the user information.



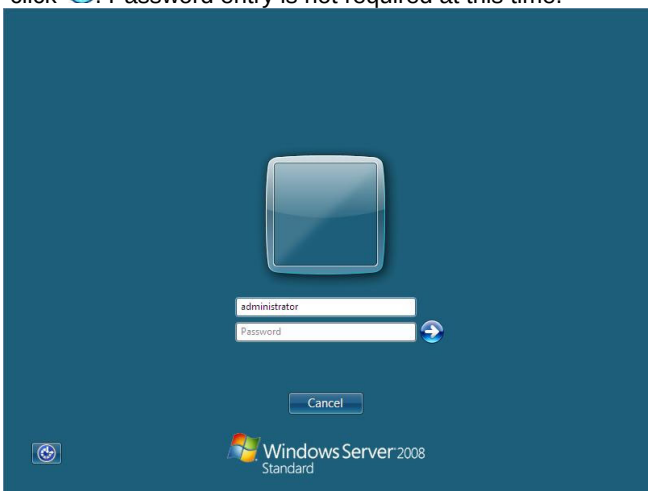
Server Core installations:

(1) If the following message appears after Windows Server 2008 setup has completed, press <Ctrl> + <Alt> + <Del> keys.



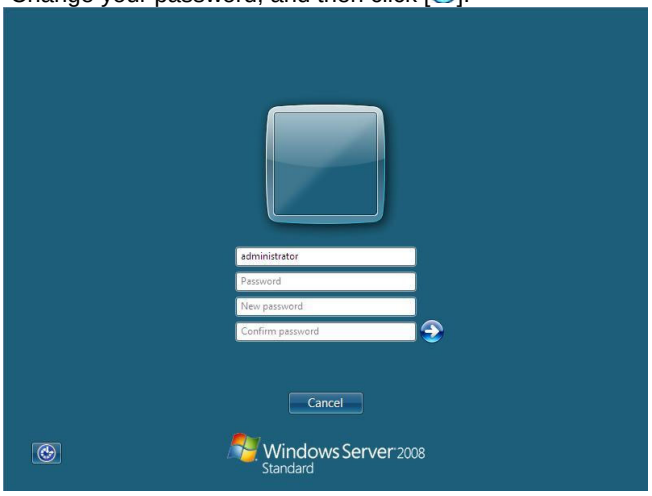
(2) When the following message appears, click **Other User**.

(3) When the following window appears, enter `administrator` into the **User** text box and then click . Password entry is not required at this time.



(4) The following window appears, prompting you to change your password before logging on. Click **OK**.

(5) Change your password, and then click [ ].



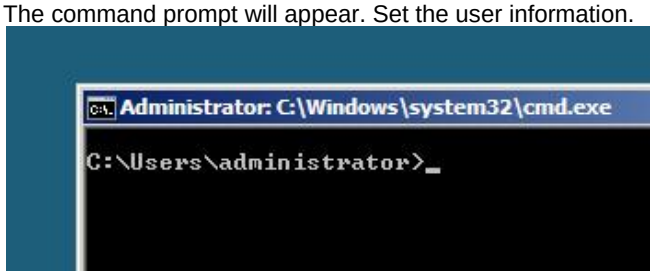
Tips

Passwords must fulfill the following requirements in Windows Server 2008.

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

(6) When the following message appears, click [OK].

(7) The command prompt will appear. Set the user information.



Tips

For detailed setup procedures, refer to the Microsoft "*Step by Step Guide*".

30. Install Starter Pack by referring to *Chapter 1 (5.4 Installing Starter Pack)*.
31. Install drivers and specify detailed settings by referring to *Chapter 1 (5.5 Setting Up Device Drivers)*.
32. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.
33. Apply Service Pack as needed according to *Chapter 1 (5.8 Applying Service Pack)*.
34. Install the applications as needed by referring to *Chapter 1* (*5.9 Installing the Applications*).
35. Execute setup by following the instructions described in *Chapter 1 (6. Setup for Solving Problems).*

Setup with Windows standard installer is now complete.

5.4 Installing Starter Pack

Starter Pack contains drivers customized for this server. Be sure to apply Starter Pack before running the system.

Important

Also install Starter Pack in the following cases.

- **The system configurations have changed**
  (If an internal optional device is installed or removed, apply the Starter Pack. If a dialog box prompting system reboot is displayed, reboot the system according to on-screen instructions, and then apply the Starter Pack.)
- **If the system was restored using a restore process**
- **If a system has been restored using the backup tool**

Note

The Scalable Networking Pack (SNP) function is disabled upon Starter Pack installation is complete.
The setting of SNP function may affect the system performance.
Contact your sales representative for details.

Tips

If the OS is installed by using EXPRESSBUILDER, Starter Pack is already applied.
If the configuration is not changed, you do not need to apply Starter Pack again.

5.4.1 When using EXPRESSBUILDER DVD

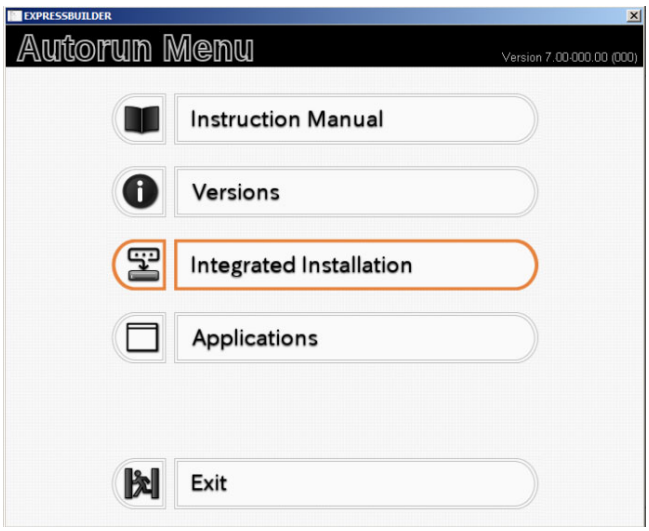
1. Log on to the system with the built-in administrator, which has administrative privileges.

2. Insert EXPRESSBUILDER DVD into the optical disk drive.

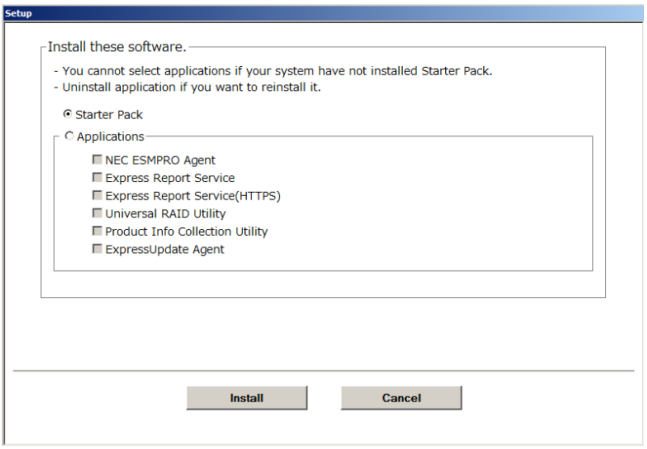
3. Start the installer of Starter Pack according to the installation type.

   Full installations

   Click **Integrated Installation** on the menu.



When the following screen appears, make sure that the **Starter Pack** option is selected, and then click **Install**.



Tips If Starter Pack is already installed, the **Applications** option is selected by default. To install Starter Pack again, select the **Starter Pack** option.

Server Core installations

(1) Enter the following command at the command prompt, and then specify the optical disk drive letter (for example, D drive).

cd /d D:\002\win\winnt\bin

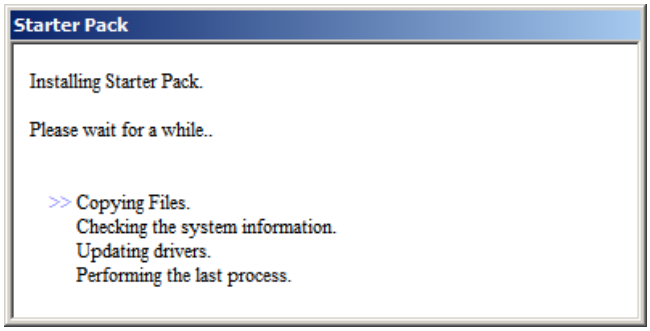
```
C:\Users\administrator>cd /d D:\002\win\winnt\bin
```

(2) Enter the following, and then press <Enter> key.

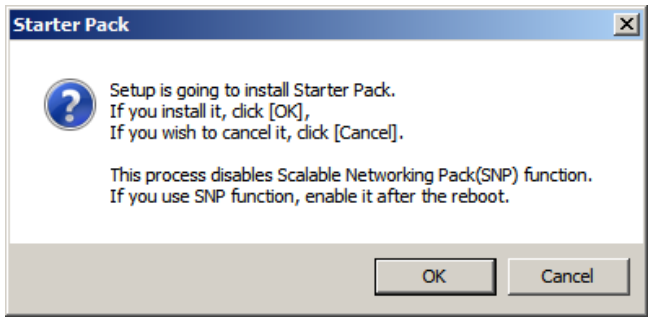
pkgsetup.vbs

```
D:\002\win\winnt\bin>pkgsetup.vbs
```

Wait for several minutes without attempting any further operation until the following window appears. On Full Installation, the following progress message appears while the Starter Pack is installed.

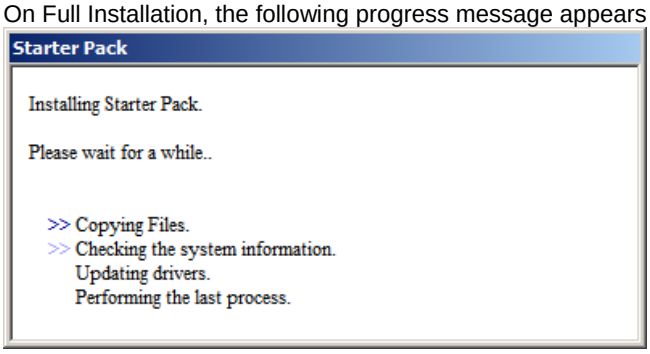


4. Read the message, and then click [OK].
   Starter Pack installation starts.

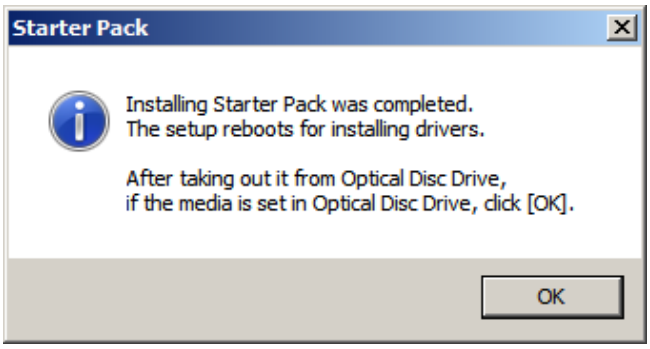

Starter Pack
Setup is going to install Starter Pack.
If you install it, click [OK],
If you wish to cancel it, click [Cancel].
This process disables Scalable Networking Pack(SNP) function.
If you use SNP function, enable it after the reboot.
OK
Cancel

Wait until installation completes (about 3 to 4 minutes).

On Full Installation, the following progress message appears while the Starter Pack is installed.



5. When the following message appears, Starter Pack installation is complete. Follow the instructions in the message, and remove EXPRESSBUILDER DVD.


Starter Pack
Installing Starter Pack was completed.
The setup reboots for installing drivers.
After taking out it from Optical Disc Drive,
if the media is set in Optical Disc Drive, click [OK].
OK

6. Click [OK] and then restart the system.

Installation of Starter Pack is now complete.

5.4.2 When using Internal Flash Memory

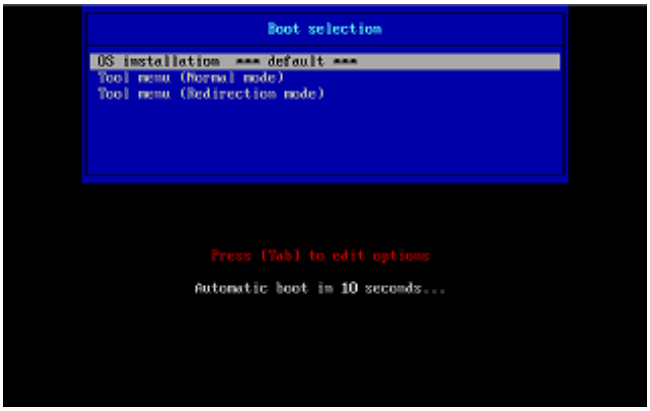
(Optional "Internal Flash Memory" is required)

1. After installing the operating system, restart the server.

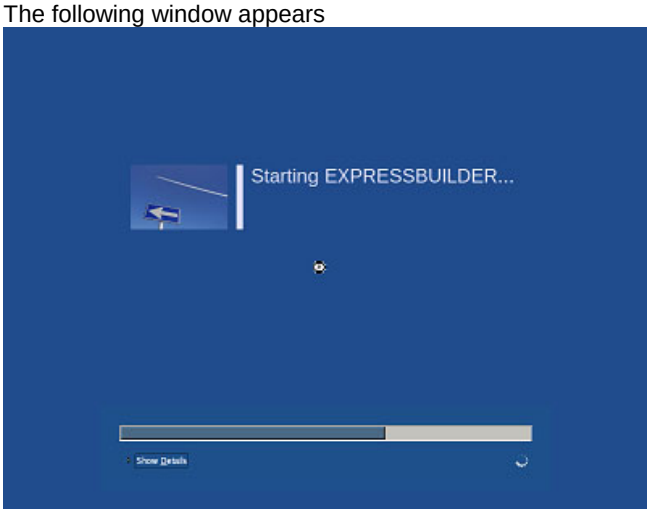
2. When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears during POST, press <F3> key.

Note At this time, be sure to remove the DVD from the optical disk drive.

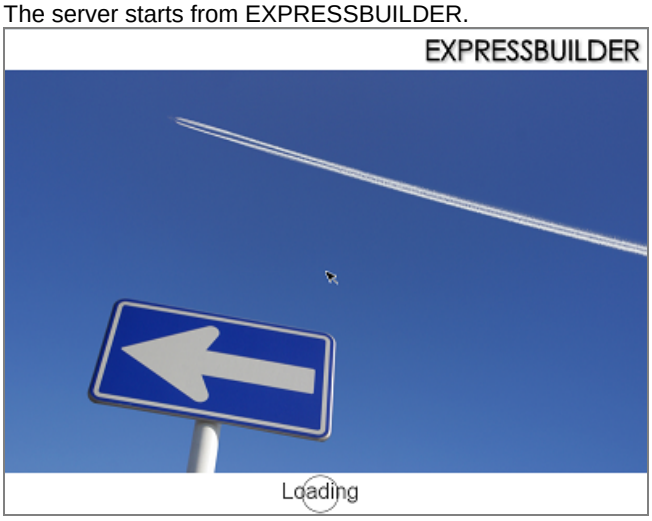
3. When the following message appears, select **Os installation *** default ***.**
You will automatically advance to the next window, with no need for further input.


Boot selection
OS installation *** default ***
Tool menu (Normal mode)
Tool menu (Redirection mode)
Press (Tab) to edit options
Automatic boot in 10 seconds...

The following window appears



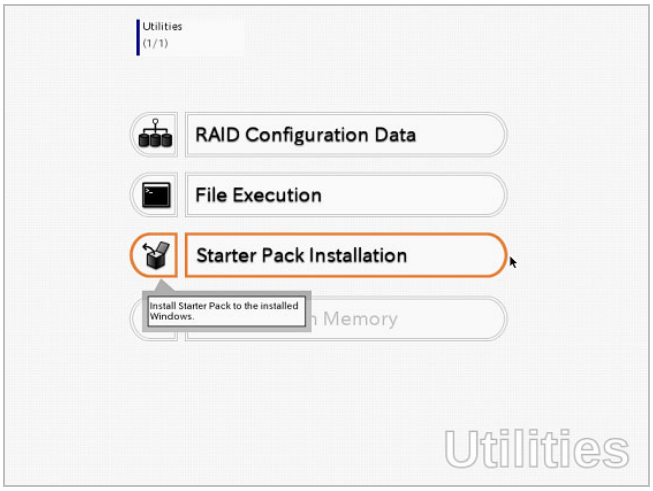
The server starts from EXPRESSBUILDER.



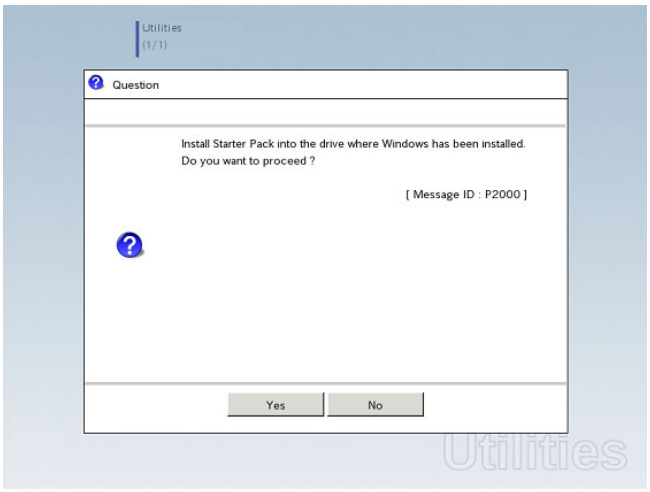
4. Select **English** on the language selection window, and then click [OK].

5. Click **Utilities**.

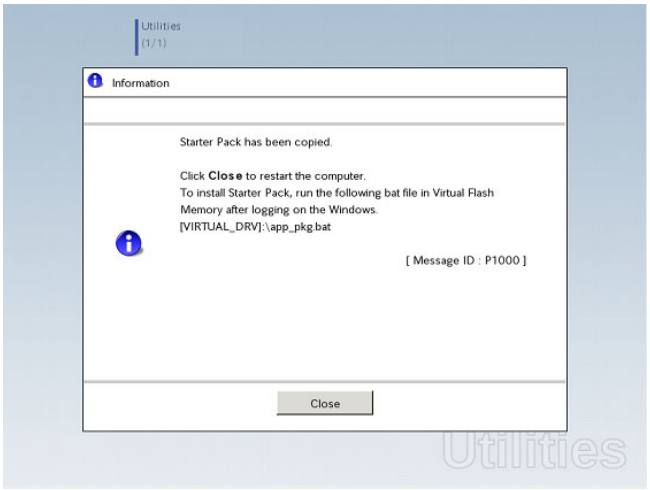
6. Click **Starter Pack Installation**.



7. Read the contents, and then click **Yes**.



8. When files are copied, click **Close** on the following screen.


Utilities
(1/1)
Information
Starter Pack has been copied.
Click Close to restart the computer.
To install Starter Pack, run the following bat file in Virtual Flash Memory after logging on the Windows.
[VIRTUAL_DRV]:\app_pkg.bat
[Message ID : P1000]
Close
Utilities

The server then restarts.

Note

You do not need to press <F3> key at this time.

9. Proceed application step according to the installation type.

Tips During setup, a virtual floppy disk drive is temporarily connected. Follow the instructions below to reference the virtual floppy disk drive.

Full installations

Click **app_pkg.bat** of Floppy disk drive (usually A drive).

Server Core installations

(1) Enter the following command at the command prompt, and then specify the drive letter of Floppy disk drive (usually A drive).

Cd /d A:

```
C:\Users\administrator>cd /d A:\
```

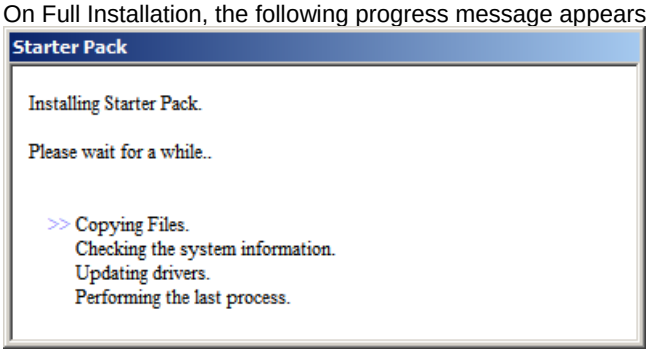
(2) Enter the following, and then press <Enter> key.

app_pkg.bat

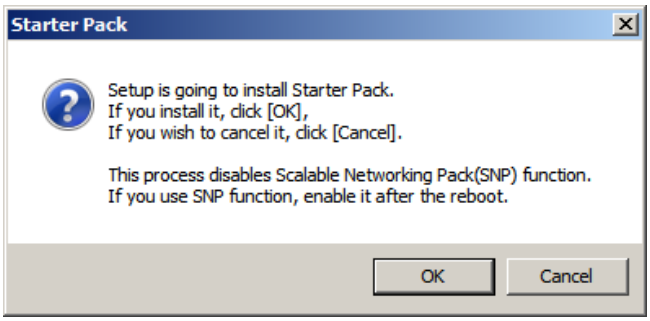
```
A:\>app_pkg.bat
```

Wait until the file copy is complete. (About 1-3minute(s).)

On Full Installation, the following progress message appears while the Starter Pack is installed.

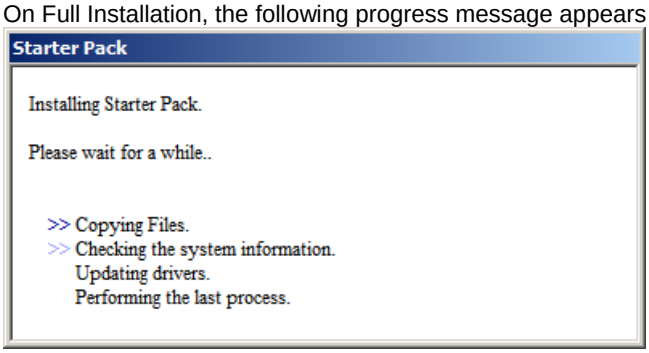


10. Read the message, and then click [OK].
Starter Pack installation starts.

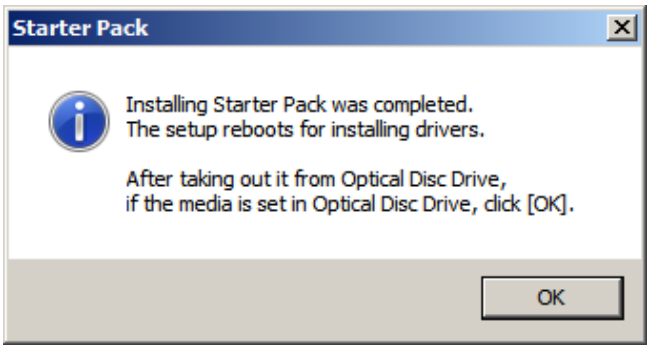

Starter Pack
Setup is going to install Starter Pack.
If you install it, click [OK],
If you wish to cancel it, click [Cancel].
This process disables Scalable Networking Pack(SNP) function.
If you use SNP function, enable it after the reboot.
OK
Cancel

Wait until the installation of the Starter Pack is complete. (About 3-5 minutes)

On Full Installation, the following progress message appears while the Starter Pack is installed.



11. Click [OK] to restart the system.


Starter Pack
Installing Starter Pack was completed.
The setup reboots for installing drivers.
After taking out it from Optical Disc Drive,
if the media is set in Optical Disc Drive, click [OK].
OK

Installation of Starter Pack is now complete.

5.5 Setting Up Device Drivers

Install and set up device drivers provided for the standard configuration.

For details regarding the installation and setup of a driver that is not described here, refer to the manual supplied with the driver.

5.5.1 Installing the LAN drivers and BACS (teaming utility)

(1) LAN drivers and BACS

If EXPRESSBUILDER is used for setup, the LAN driver and BACS will automatically be installed.
If the Windows standard installer is used for setup, install Starter Pack to install the LAN driver and BACS.

Important **WOL is supported by the standard network adapters only.**

Note

- To change the LAN driver and BACS settings, log on to the system from a local console using an administrator's account. Remotely changing the settings by using the operating system's remote desktop feature is not supported.
- Be sure to select the **Internet Protocol (TCP/IP)** check box when specifying an IP address.

(2) Optional LAN board

This server supports the following optional LAN boards.

The drivers for LAN boards are automatically installed using the OS plug-and-play function.

Optional LAN boards: N8104-128/132/133/138

The drivers for LAN boards are automatically installed using the OS plug-and-play function.

The LAN driver is not installed if N8104-145 is not installed at the time of installation of the OS by using EXPRESSBUILDER or at installation of Starter Pack.

Perform the steps below to install the N8104-145 LAN driver manually.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.

   If Autorun Menu appears, close the menu.

   Tips EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

2. Open Command Prompt, and execute install.bat in the following folder.

   When using EXPRESSBUILDER DVD:

   EXPRESSBUILDER DVD:`\002\win\winnt\ws2008\lan\intel`

   If Starter Pack was installed from Internal Flash Memory:

   System Drive:`\StartPKG\ws2008\lan\intel`

3. When the following message appears, remove the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Installation Completed

Setup is now completed.

Note

- If the LAN driver has been installed in N8104-145, PROSet (Teaming utility) is also installed.
- Using an optional LAN board, perform procedure "4.4.2 Setting up LAN drivers" for each optional LAN board.

(3) Network adapter name

After installing the LAN drivers, the following network adapter names will be displayed by the Device Manager or BACS.

Network adapters for the standard configuration
Broadcom NetXtreme Gigabit Ethernet #xx*

If connecting with an optional LAN board:
[N8104-128] Broadcom BCM57711 NetXtreme II 10 GigE (NDIS VBD Client) #xx*
[N8104-132/133/138] Broadcom NetXtreme Gigabit Ethernet #xx *
[N8104-145] Intel(R) Ethernet Server Adapter I340-T2 #xx*

* If there are adapters with the same name, a different identification number will be assigned to *xx*.

Tips

The ID for N8104-128 might be a number of two or more digits. This is due to the LAN driver specifications and not an error. This number cannot be changed.

5.5.2 Setting up LAN drivers

(1) Setting link speed

The transfer rate and duplex mode of the network adapter must be the same as those of the switching hub. Follow the procedure below to specify the transfer rate and duplex mode.

1. Open the **Device Manager**.
2. Expand **Network Adapters**, and then double-click the name of the network adapter you want to set. The properties of the network adapter will be displayed.
3. Select the Advanced or **Link Spped** tab, and then set the Speed & Duplex values to *the same as those of the switching hub*.
4. Click [OK] in the Network Adapter Properties dialog box.
5. Restart the system.

The link speed setting is now complete.

(2) Using N8104-128

Using N8104-128 with the server, **iSCSI Offload Engine** and **EnablePMTUBHDetect** must be disabled.

Follow the procedure below to set it.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window.
   Broadcom Advanced Control Suite starts.
2. Set **Filter** to **ALL VIEW**, select **Broadcom BCM57711 NetXtreme II 10 GigE # xx** under **Explorer View** the **Adapter xx (BCM57711 A0) - Port x**.
3. Tab on **Configurations** at the right side screen and then expand **Resource Reservations**.
4. Click the [Configure] button on the **Click the button to configure**.
   The **Hardware and Resource Configuration Wizard** appears.
5. Remove a checkmark from [iSCSI] under **Protocols**, if checked.
   Select [Next], and then click the [Apply] button.
6. When the following message appears, select [Yes].

   > Applying the changes will temporarily interrupt the network connection.
   > The process may take several minutes and the connection will resume afterwards.
   > Do you want to continue?

7. Complete steps 2 to 6 for each N8104-128 network adapter.
   Then, close the **Broadcom Advanced Control Suite**.
8. Insert EXPRESSBUILDER DVD into the optical disk drive.
   If Autorun Menu appears, close the menu.

   Tips EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

9. Double-click **`BhdDisabled.vbs`** in the following folder.
   - When using EXPRESSBUILDER DVD:
     EXPRESSBUILDER DVD:`\002\win\winnt\ws2008\lan\bcom\ws2008x86\lan`
   - If Starter Pack was installed from Internal Flash Memory:
     System drive:`\StartPKG\ws2008\lan\bcom\ws2008x86\lan`
10. When the following message appears, click [OK].

    > Black Hole Router Detect Disable Completed, Reboot the system

11. Eject EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Setup is now complete.

(3) Using N8104-132/133/138

Using N8104-132/133/138 with the server, follow the procedure below to set it.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.
   If Autorun Menu appears, close the menu.

Tips EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

2. Double-click to the following file.
   - When using EXPRESSBUILDER DVD:
     EXPRESSBUILDER DVD:\002\win\winnt\ws2008\lan\pgdyavd_Disable.vbs
   - If Starter Pack was installed from Internal Flash Memory:
     System drive:\StartPKG\ws2008\lan\pgdyavd_Disable.vbs

3. When the following message appears, click [OK].

```
Configuration Completed
[Option:PopUp RLV Disabled(Action:Done)]
Reboot the system
```

Tips The message “Action:Non” indicates that the LAN driver is already set.

4. Eject EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Setup is now completed.

5.5.3 Setting up team/LiveLink (BACS)

Important

- **When using Smart Load Balancing and Failover (without Standby Member), be sure to setup LiveLink at creation of team.**
  When using Smart Load Balancing and Failover (with Standby Member), setup for LiveLink is not essential.
- **When deleting the team, refer to *Chapter 1 (5.5.3 Setting up team/LiveLink) - (4) Procedure for deleting team*. When replacing the motherboard or a LAN board, follow these steps to remove the team and create it again after replacement.**
- **Be sure to specify the same Jumbo Mtu (Jumbo Packet) setting to all the adapters that compose a team.**
- **Using Server Core installations, Not supporting setting up team/LiveLink by the BACS.**

(1) Team types

The following team types are supported.

- **Smart Load Balancing and Failover (without Standby Member)**
  All adapters that compose the team perform communication.
  If a communication failure occurs on an adapter, other adapters that compose the team continue the communication.
  When the adapter on which the communication failure occurred recovers, it joins the team again and resumes the communication.
- **Smart Load Balancing (Auto-Failback Disable) (with Standby Member)**
  Among the adapters that compose the team, primary adapters except the standby member perform communication.
  If a communication failure occurs, the standby member continues the communication.
  When the adapter on which the communication failure occurred recovers, it joints the team again and the standby adapter returns to the standby state.
- **FEC/GEC Generic Trunking**
  The combination of multiple adapters into a single channel to provide greater bandwidth.

Important

- **LiveLink is not available for this team mode.**
- **FEC/GEC modes require switch support.**

(2) LiveLink

LiveLink is a function that detects communication route failures of adapters.
It periodically investigates the communication status of specified destinations (IP address).

Link packets are sent from each adapter within a team.
If a response to the transmission of a link packet within the specified range is not detected, it is identified as a communication route failure and adapter communication is stopped.

When a response to the submission of a link packet is detected, communication LiveLink identifies communication as having been recovered, and communication using that adapter automatically resumes.

Note

You must set up LiveLink when you create a team.

(3) Setting up team/LiveLink

Important

Possible combinations of network adapters that compose the team are as follows.

When the number of adapters that composes the team is up to four:

- **Between standard network adapters**
- **Between LAN cards excluding N8104-128**
- **A standard network adapter and LAN card N8104-128**

When the number of adapters that composes the team is up to two:

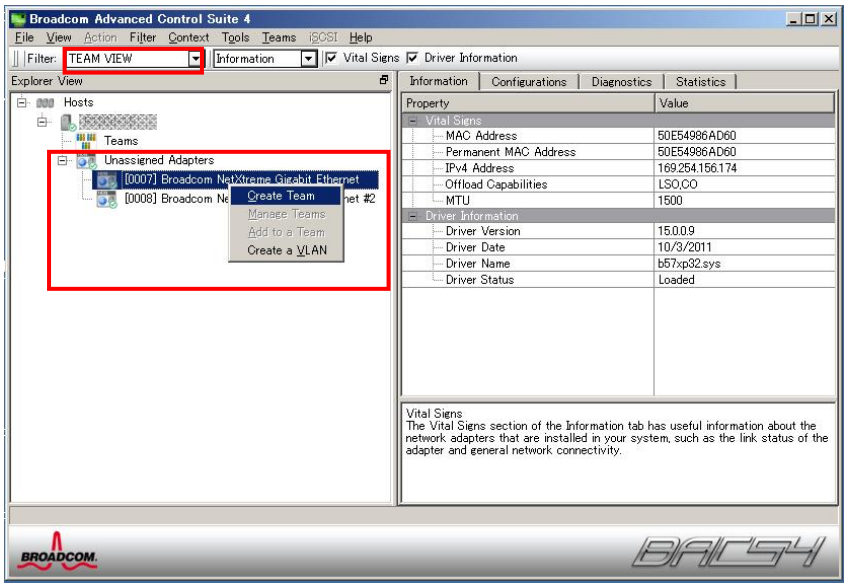
- **Between N8104-128 adapters.**

Teaming with another N8104-128 on different board is not supported.

Tips

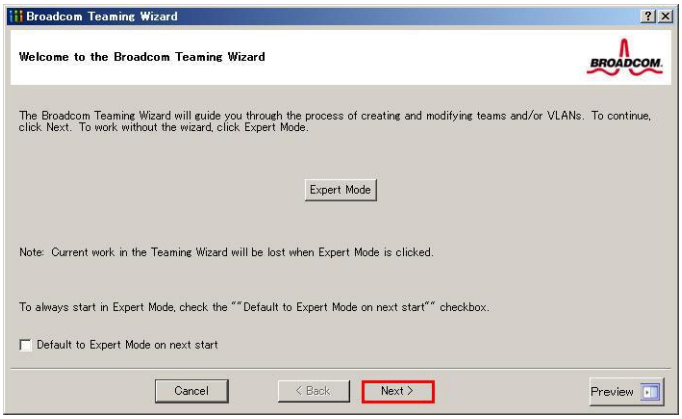
To edit a team, right-click on the BACS team, and then select **Edit Team**.
Then refer to step 3 and the subsequent steps to edit the team.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window.
   Broadcom Advanced Control Suite starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Create a Team** from the short-cut menu.



The **Broadcom Teaming wizard** appears.

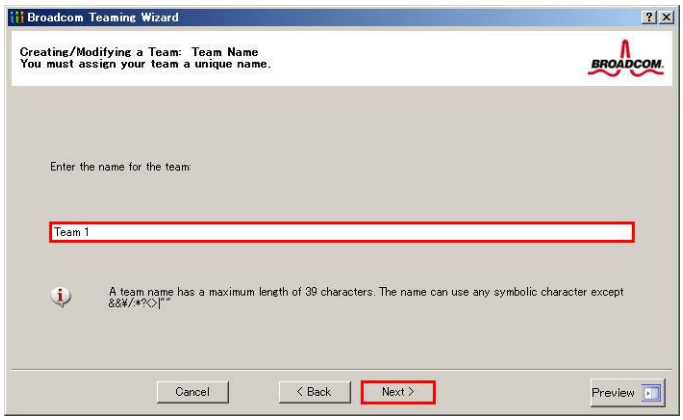
3. Click [Next].


Broadcom Teaming Wizard
Welcome to the Broadcom Teaming Wizard
BROADCOM.
The Broadcom Teaming Wizard will guide you through the process of creating and modifying teams and/or VLANs. To continue, click Next. To work without the wizard, click Expert Mode.
Expert Mode
Note: Current work in the Teaming Wizard will be lost when Expert Mode is clicked.
To always start in Expert Mode, check the ""Default to Expert Mode on next start"" checkbox.
Default to Expert Mode on next start
Cancel
< Back
Next >
Preview

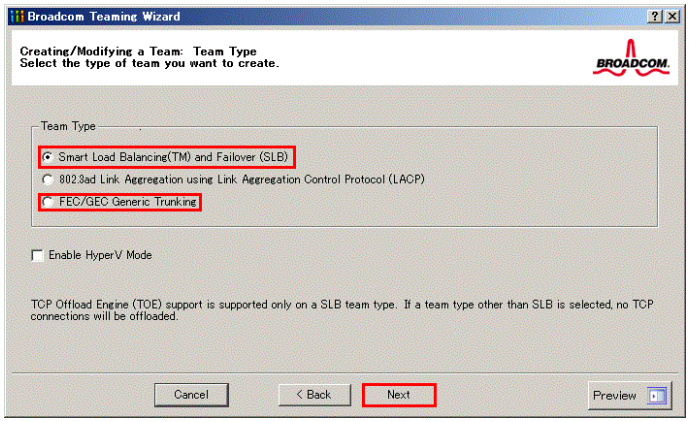
Note

Do not use **Expert Mode.**

4. Enter any name into the team name entry column, and then click [Next].


Broadcom Teaming Wizard
Creating/Modifying a Team: Team Name
You must assign your team a unique name.
BROADCOM.
Enter the name for the team:
Team 1
A team name has a maximum length of 39 characters. The name can use any symbolic character except &&¥/*?<>|""
Cancel
< Back
Next >
Preview

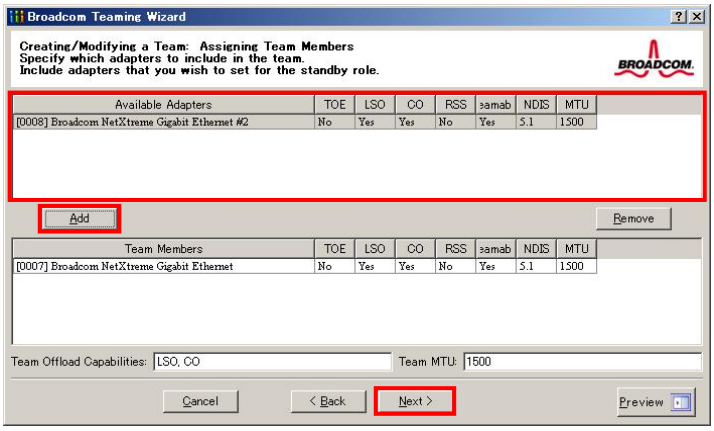
5. Team Type select the type of team you want to create, and then click [Next].


Broadcom Teaming Wizard
Creating/Modifying a Team: Team Type
Select the type of team you want to create.
BROADCOM.
Team Type
Smart Load Balancing(TM) and Failover (SLB)
802.3ad Link Aggregation using Link Aggregation Control Protocol (LACP)
FEC/GEC Generic Trunking
Enable HyperV Mode
TCP Offload Engine (TOE) support is supported only on a SLB team type. If a team type other than SLB is selected, no TCP connections will be offloaded.
Cancel
< Back
Next
Preview

Note

- 802.3ad Link Aggregation using Link Aggregation Control Protocol(LACP) is not supported.
- .When the FEC/GEC Generic Trunking selected.
  The following message will appears, select [OK].
  "Verify that the network switch connected to the team members is configured correctly for the team type."

6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].



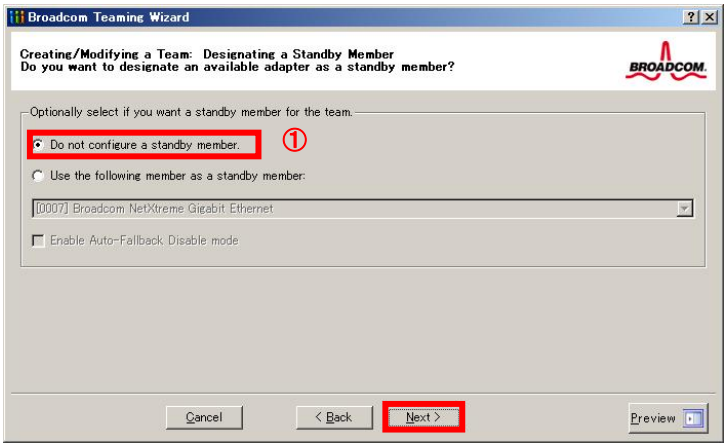
Note When selecting FEC/GEC Generic Trunking, skip to step 15.

7. Proceed according to your desired team type.

   – Smart Load Balancing and Failover (without Standby Member)

   (1) Select **Do not configure a standby member**.

   (2) Click [Next].


Broadcom Teaming Wizard
Creating/Modifying a Team: Designating a Standby Member
Do you want to designate an available adapter as a standby member?
BROADCOM.
Optionally select if you want a standby member for the team.
Do not configure a standby member.
①
Use the following member as a standby member:
[0007] Broadcom NetXtreme Gigabit Ethernet
Enable Auto-Fallback Disable mode
Cancel
< Back
Next >
Preview

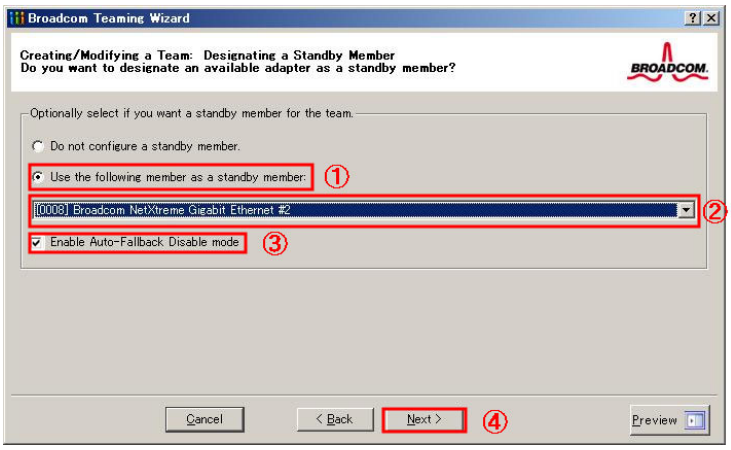
– Smart Load Balancing (Auto-Failback Disable) (with Standby Member)

(1) Select **Use the following member as a standby member**.

(2) Select the adapter that is to be a standby member from the drop-down list.

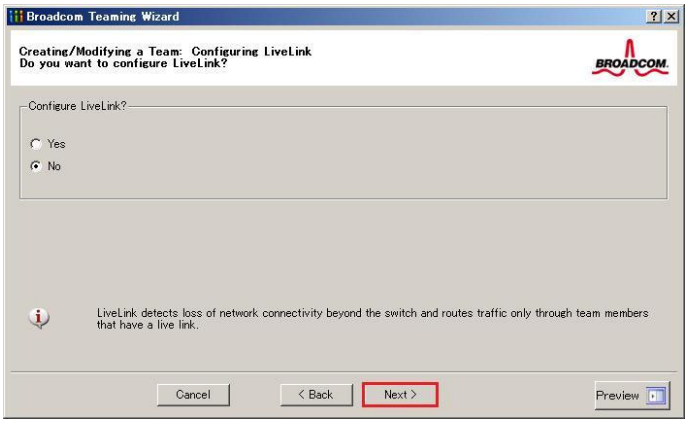
(3) Select **Enable Auto-Failback Disable mode**.

(4) Click [Next].

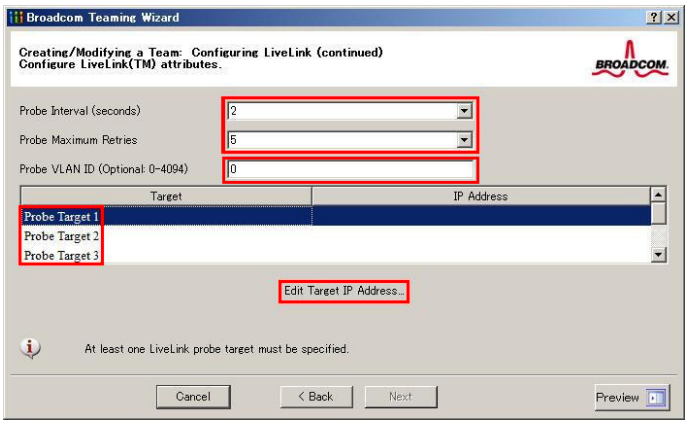

Broadcom Teaming Wizard
Creating/Modifying a Team: Designating a Standby Member
Do you want to designate an available adapter as a standby member?
BROADCOM
Optionally select if you want a standby member for the team.
Do not configure a standby member.
Use the following member as a standby member:
①
[0008] Broadcom NetXtreme Gigabit Ethernet #2
②
Enable Auto-Failback Disable mode
③
Cancel
< Back
Next >
④
Preview

Note *Enable Auto-Failback Disable mode* is cleared while editing the team. Select it again.

8. When configure LiveLink, select Yes and click [Next] and go to step 9.
When LiveLink is unnecessary, select No and click [Next] and then go to step 15.


Broadcom Teaming Wizard
Creating/Modifying a Team: Configuring LiveLink
Do you want to configure LiveLink?
BROADCOM
Configure LiveLink?
Yes
No
LiveLink detects loss of network connectivity beyond the switch and routes traffic only through team members that have a live link.
Cancel
< Back
Next >
Preview

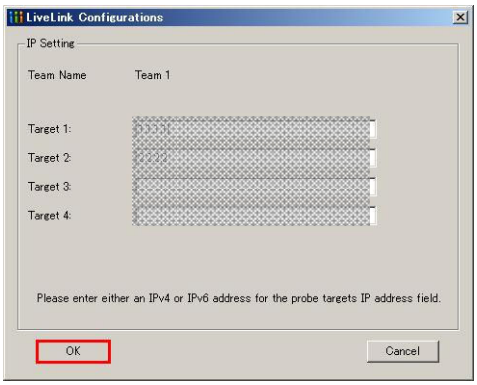
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target *xx***), and then click [Edit Target IP Address…].



Tips

- The setting range of Probe interval (link packet transmission interval) is 1 to 60 (units: seconds).
- The setting range of Probe maximum retries (link packet retry count) is 1 to 10 (times).
- Switching a path upon detection of a communication path error by LiveLink takes (Probe maximum retries + 1) x Probe interval (seconds) at maximum. If a link is down is detected, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down.
- When using Tagged VLAN, input VLAN ID to "Probe VLAN ID".

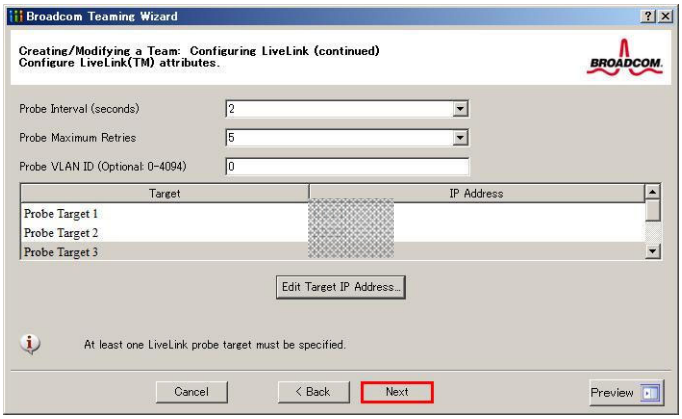
10. In the **Target *xx*** text box, enter the IP address of the alive monitoring server, and then click [OK].



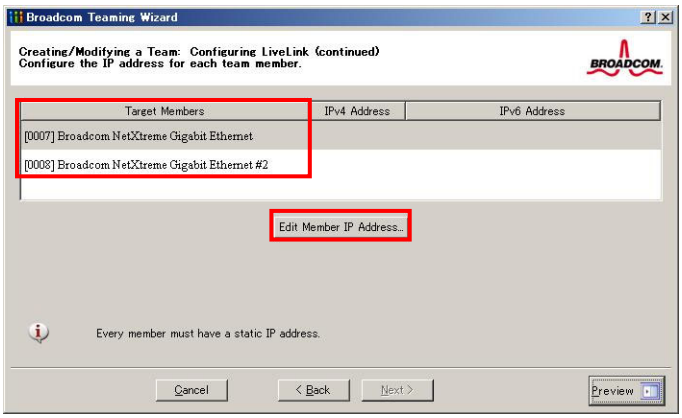
Note

- *Target xx* must be the same broadcast domain as that specified for the data communication IP and LiveLink communication IP (described in step 13). Specify an IP address that exists on the network and with which communication is possible.
- If communication with the IP address specified in *Target xx* is not possible, the team will also be unable to communicate. It is therefore recommended that you specify multiple IP addresses using *Probe Target*. Up to four IP addresses can be specified.

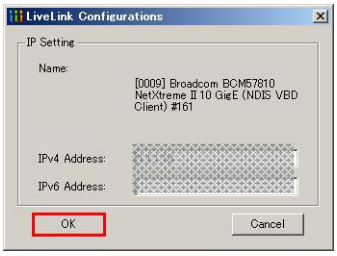
11. Click [Next].



12. Select an adapter from the **Team Members** area, and then click [Edit Member IP Address…].



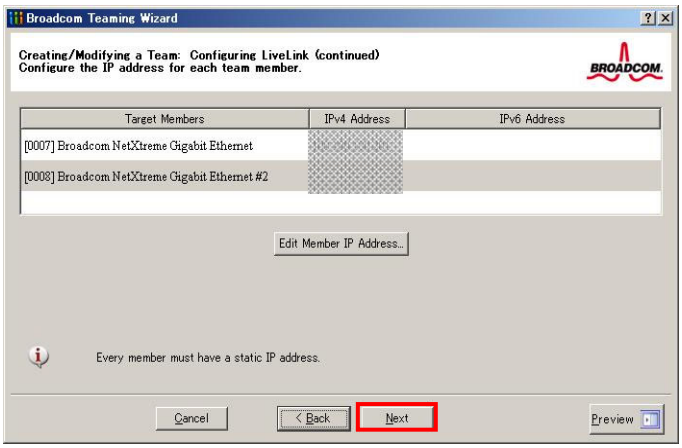
13. Enter the IP address used for LiveLink communication, and then click [OK].



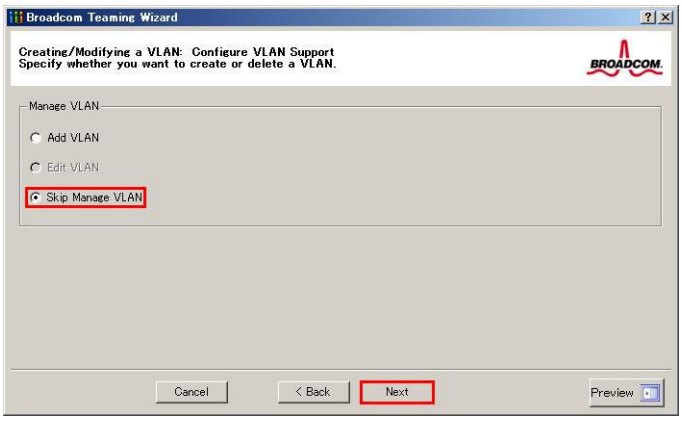
Note

- Be sure to specify an IP address for LiveLink communication for all the adapters that compose the team. The address specified here is the IP address for LiveLink communication. Specify a different IP address for data communication.
- For *Target xx*, specify an IP address that is unique on the network and with which communication is possible.

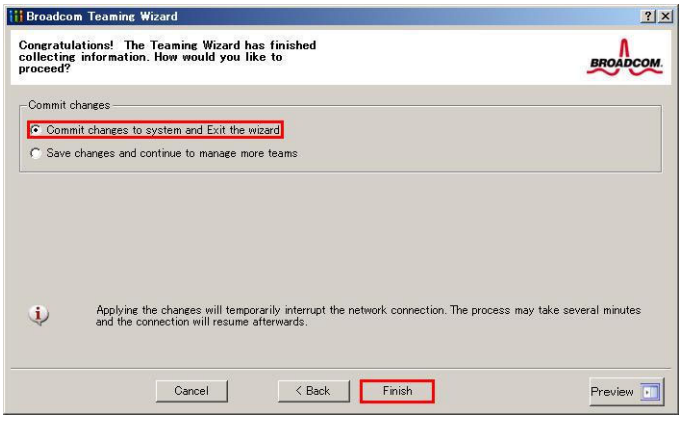
14. Click [Next].



15. Make sure that **Skip manage VLAN** is selected under **Manage VLAN**, and then click [Next].
It is an example of if you do not want to use the VLAN.



16. Make sure that **Commit changes to system and Exit the wizard** is selected under **Commit changes**, and then click [Finish].


Broadcom Teaming Wizard
Congratulations! The Teaming Wizard has finished collecting information. How would you like to proceed?
BROADCOM.
Commit changes
Commit changes to system and Exit the wizard
Save changes and continue to manage more teams
Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards.
Cancel
< Back
Finish
Preview

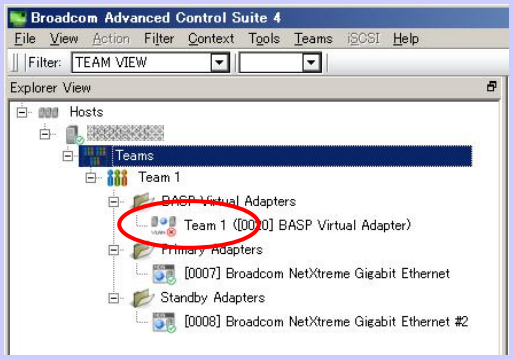
Note

When the message below appears, select [Yes].

"Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards."

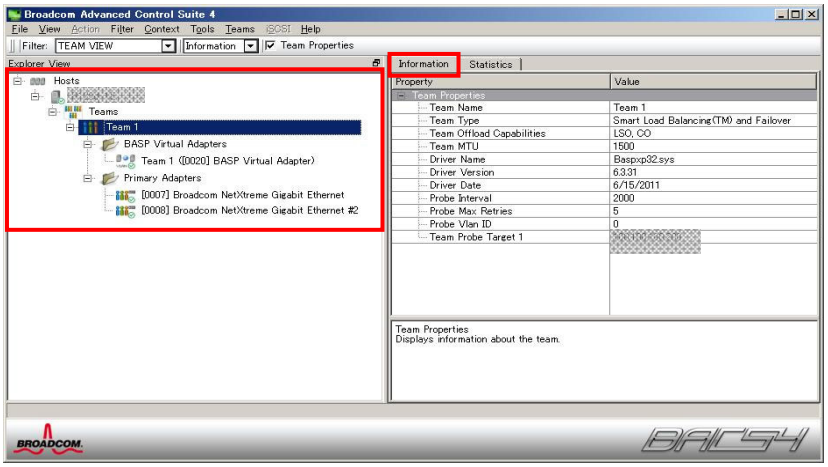
Tips

After creating a team, if the teaming adapter displays like the following image, perform steps 8 through 14 again and correct the LiveLink settings.

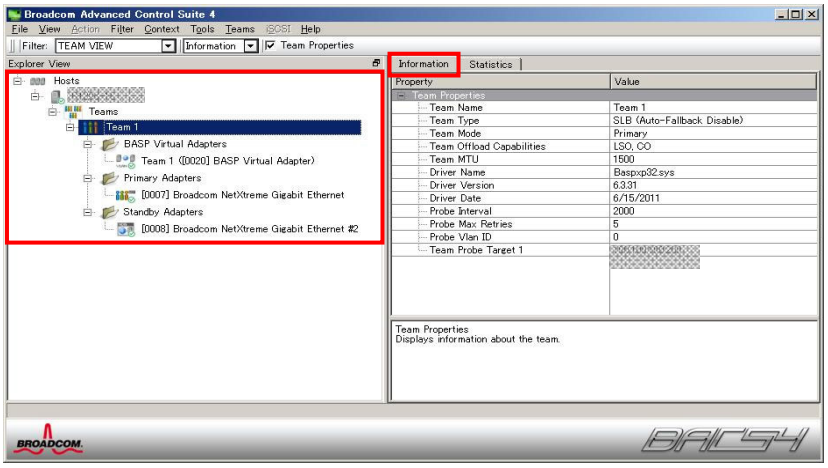


17. Restart the system.
18. After the system starts, start **Broadcom Control Suite** by clicking the **Broadcom Control Suite** icon in **Control Panel**, and confirm that a team has been created. Confirm the team settings on the **Information** window to the right.

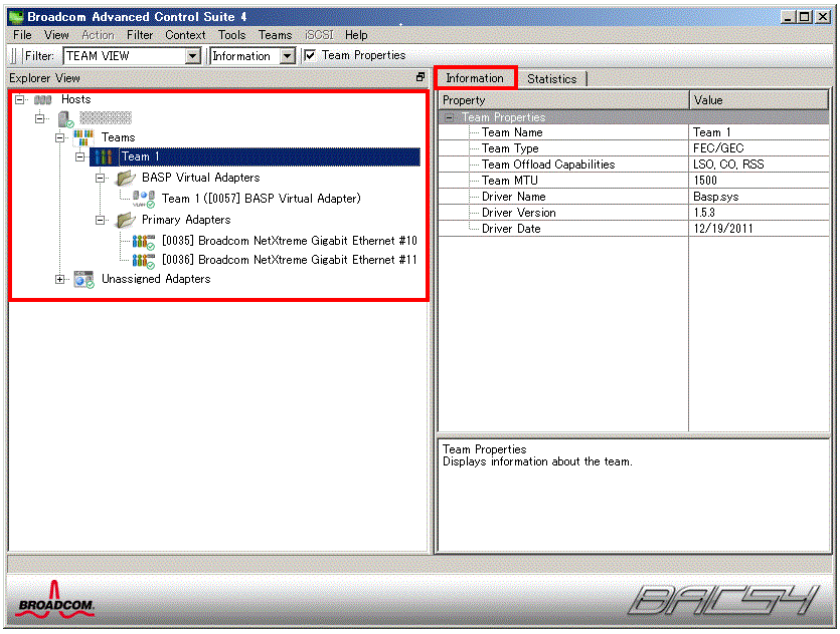
– Smart Load Balancing and Failover (without Standby Member)



– Smart Load Balancing (Auto-Failback Disable) (with Standby Member)



– Smart Load Balancing (Auto-Failback Disable) (with Standby Member)



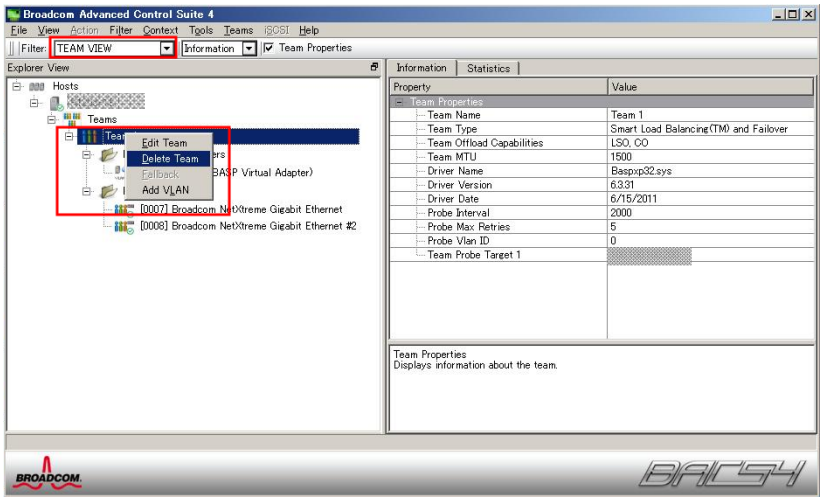
Team setup is now complete.

(4) Procedure for deleting team

Note

You must delete teams from Broadcom Control Suite.
You cannot delete the team from the team adapter displayed in the Device Manager.

1. Double-click Broadcom Control Suite in the Control Panel window.
   Broadcom Advanced Control Suite starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Delete Team** from the short-cut menu.



Note

When the message below appears, select [Yes].

```
"The selected team will be deleted from system, do you want to
proceed?
   NOTE:  Applying the changes will temporarily interrupt the
          network connection. The process may take several
          minutes and the connection will resume afterwards."
```

3. Insert EXPRESSBUILDER DVD into the optical disk drive.
   If Autorun Menu appears, close the menu window.

Tips

You do not have to insert EXPRESSBUILDER DVD if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

4. Double-click `addlvlanstats.vbs` in the following folder.
   - When using EXPRESSBUILDER DVD:
     Optical disk drive`:\002\win\winnt\ws2008\lan`
   - If Starter Pack was installed from Internal Flash Memory:
     System drive`:\StartPKG\ws2008\lan`

5. When the following message appears, click [OK].

6. Eject EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Team deletion is now complete.

5.5.4 Setting up team (PROSet)

(1) Team types

The following team types are supported.

- Adapter Fault Tolerance (AFT) is a feature that creates a group containing and automatically converts the process of the working adapter to the other adapter in the group when any trouble occurred on that adapter.
- Adaptive Load Balancing (ALB) is a feature that creates a group containing more than one adapter and enhances the throughput by operating packet transmission from the server by all the adapters. This feature includes AFT feature.
- Switch Fault Tolerance (SFT) is a feature that provides a failover relationship between two ports when each port is connected to a separate switch. SFT supports two ports per team.
- Static Link Aggregation (SLA) accounts for the GEC and 802.3ad static protocols. SLA is a switch-assisted teaming mode and requires configuring ports at both ends of the link: server interfaces and switch ports.

Important

- **The adapters specified as a group of Adaptive Load Balancing (ALB) can be connected to only Switching Hub.**
- **When exchange the mother board or option network card, make sure to remove the adapter team before exchanges and recreate the adapter team after exchange complete.**
- **Confirm the port setting of switching hub (L2) matches the server network adapter Teaming mode.**
- **All the adapters specified as a group of Adapter Teaming must exist on the same LAN. If they are connected to the separate switches, they will not work normally.**

(2) Setting up team

Important

Possible combinations of network adapters that compose the team are as follows.

When the number of adapters that composes the team is up to four:

- **Between N8104-145 adapters.**

1. Open the **Device Manager**.
2. Open **Network adapters** → [Intel(R) xxx] properties.
3. Click **Teaming** tab and check the **Team this adapter with other adapters** check box. Click **New Team**.
4. Fill the name of the team in **Specify a name for the team** and click **Next**.
5. Include the adapter to the team and click **Next**.
6. Select a team mode, and then click **Next**.
7. Click **Finish**.
8. Click **TEAM: "Team name"** from **Device manager** → **Network adapters** to modify the team. Click **Settings** tab and click **Modify Team** button.
9. Refer to the following procedure to set the team member adapter priority status.

Note

Adapter priority config can be confirmed by the following procedure:

1. Click [TEAM: "Team name"] from [Device manager] → [Network adapters].
2. Click [Settings] and confirm Adapters in team list.

10. Click **Test Switch** → **Run test** to confirm the adapter team is properly setup.
11. Confirm the result in [Test results].
12. Restart the system.

(3) Procedure for deleting team

1. Open the **Device Manager**.
2. Click **Network adapters**, and open [TEAM: "Team name"] properties.
3. Click **Setting** tab.
4. Click **Remove Team** button.
5. Click **Yes** to the message.

6. Confirm [TEAM: "Team name"] adapter is not existing in [Network adapters] tree and restart the system.

5.5.5 Graphics accelerator driver

The graphics accelerator driver for standard configurations is installed when Starter Pack is installed from EXPRESSBUILDER.

If you completed Setup with EXPRESSBUILDER, then the graphics accelerator driver has been automatically installed.

Tips The graphics accelerator driver is only enabled in Full installations. Standard VGA is used in the case of Server Core installation.

To reinstall drivers separately, complete the following steps.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.
   If Autorun Menu appears, close the menu window.

   Tips You do not have to insert EXPRESSBUILDER DVD if Starter Pack was installed from Internal Flash Memory.

2. From the **Start** menu, point to **All programs**, **Accessories**, and then select **Explorer**.
3. Double-click the **`install.bat`** icon in the following folder.

   - When using EXPRESSBUILDER DVD:

     Windows Server 2008 64-bit Edition

     EXPRESSBUILDER DVD`:\002\win\winnt\ws2008x64\video`

     Windows Server 2008 32-bit Edition

     EXPRESSBUILDER DVD`:\002\win\winnt\ws2008\video`

   - If Starter Pack was installed from Internal Flash Memory:

     System drive`:\StartPKG\ws2008\video`

   Continue installation according to the onscreen messages.
   You will be prompted to confirm the End User License Agreement during this process. Click the [ACCEPT] button and continue.

4. Eject EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Graphic accelerator driver installation is now complete.

5.5.6 When using a SAS controller (N8103-142)

The driver for SAS controller N8103-142 is automatically installed by Windows Plug-and-Play.

5.5.7 When using a RAID Controller (N8103-161)

The driver for RAID Controller N8103-161 is automatically installed by Windows Plug-and-Play.

5.5.8 When using a Fibre Channel controller (N8190-153/154)

The driver for Fibre Channel controller N8190-153/154 is automatically installed by Windows Plug-and-Play.

5.6 Specifying PAE Option

If the server can mount a memory of more than 4 GB in a 32-bit system, specify the PAE option settings to use that memory.

Important **The PAE option is not supported by Windows Server 2008 Standard.**

For Windows Server 2008, the PAE option can be specified by using the `Bcdedit.exe` file. Follow the procedure below to specify the PAE option.

1. Select **Run** from the **Start** menu.
2. Enter `cmd.exe` in the **Open** text box, and then click [OK] to start the command prompt.
3. Execute the following command at the command prompt:
   `bcdedit /set pae forceenable`
4. Restart the system.
   The above setting is applied after restart.
5. Execute the following command at the command prompt:
   `bcdedit`
   Make sure that `pae ForceEnable` is added to **Windows Boot Loader**.

Specification of the PAE option settings is now complete.
For details about `Bcdedit.exe`, refer to the following:

Boot Configuration Data Editor Frequently Asked Questions

http://technet.microsoft.com/en-us/library/cc721886(WS.10).aspx

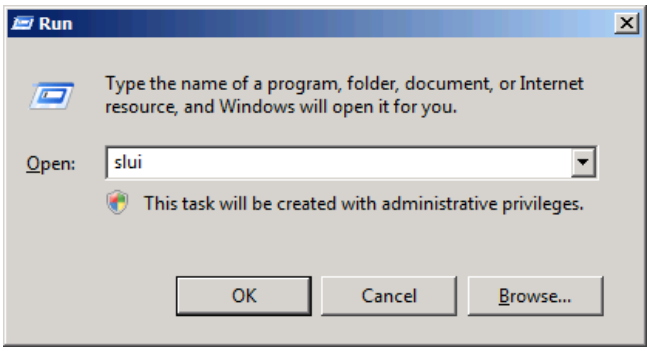
5.7 License Authentication

To use Windows Server 2008, confirm whether the license has been authenticated, and if it has not, perform the license authentication procedure.

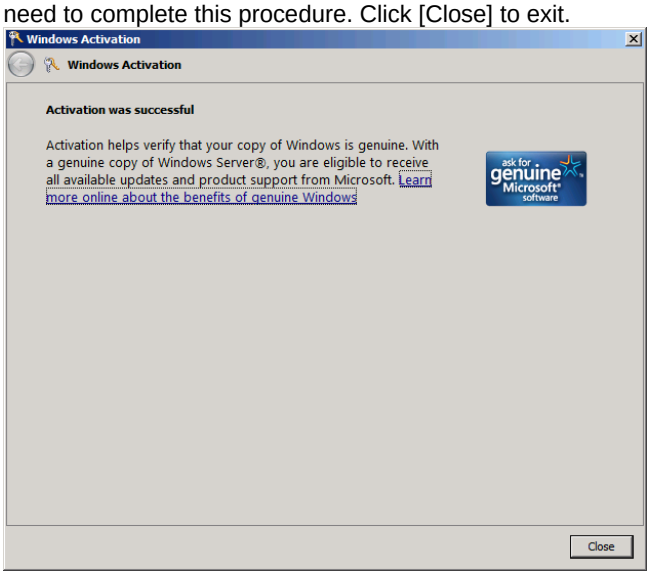
The following describes the license authentication procedure.

(1) Full installations

1. Select **Run** from the **Start** menu.
   Enter the following, and then press <Enter> key.
   `slui`

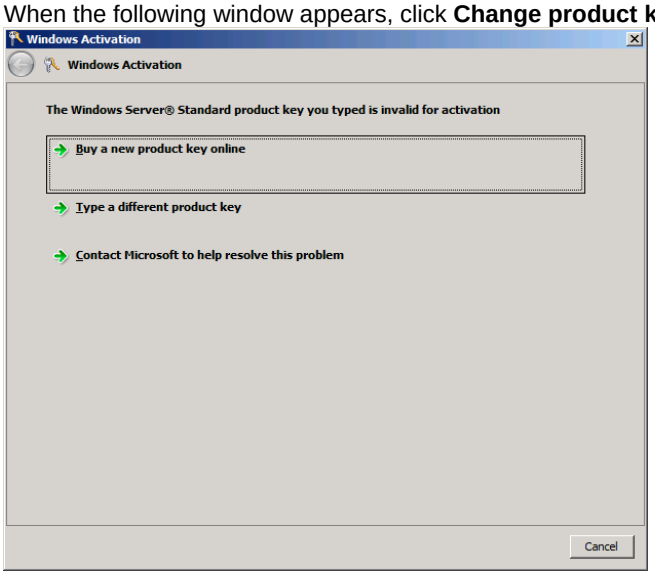

Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:
slui
This task will be created with administrative privileges.
OK
Cancel
Browse...

If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure. Click [Close] to exit.

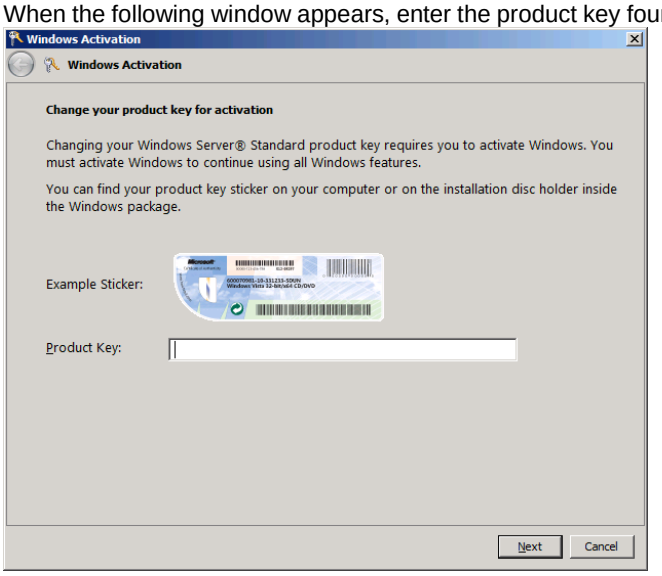

Windows Activation
Windows Activation
Activation was successful
Activation helps verify that your copy of Windows is genuine. With a genuine copy of Windows Server®, you are eligible to receive all available updates and product support from Microsoft. Learn more online about the benefits of genuine Windows
ask for genuine Microsoft software
Close

2. For installation from Backup DVD-ROM, replace the product key.

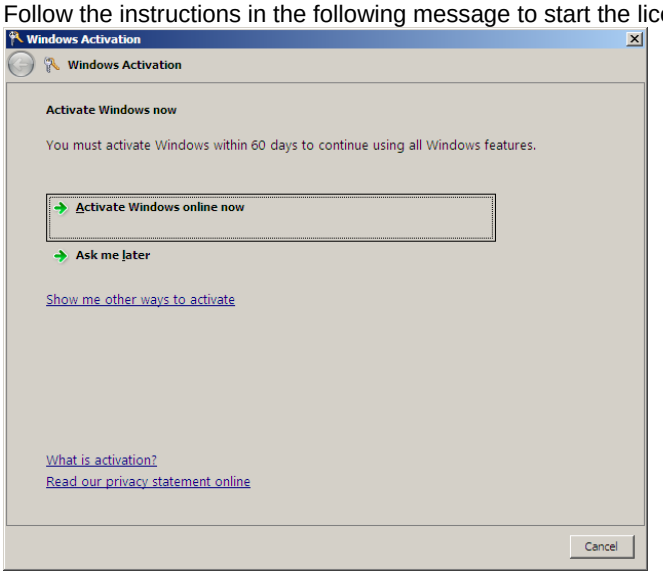
   When the following window appears, click **Change product key**.


Windows Activation
Windows Activation
The Windows Server® Standard product key you typed is invalid for activation
Buy a new product key online
Type a different product key
Contact Microsoft to help resolve this problem
Cancel

3. When the following window appears, enter the product key found on the COA label, and then click [Next].


Windows Activation
Windows Activation
Change your product key for activation
Changing your Windows Server® Standard product key requires you to activate Windows. You must activate Windows to continue using all Windows features.
You can find your product key sticker on your computer or on the installation disc holder inside the Windows package.
Example Sticker:
Product Key:
Next
Cancel

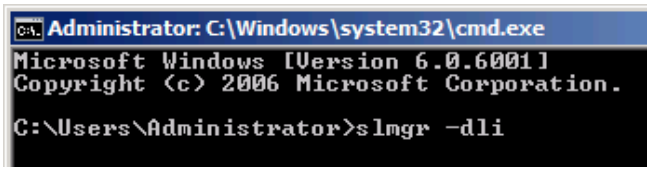
4. Follow the instructions in the following message to start the license authentication process.


Windows Activation
Windows Activation
Activate Windows now
You must activate Windows within 60 days to continue using all Windows features.
Activate Windows online now
Ask me later
Show me other ways to activate
What is activation?
Read our privacy statement online
Cancel

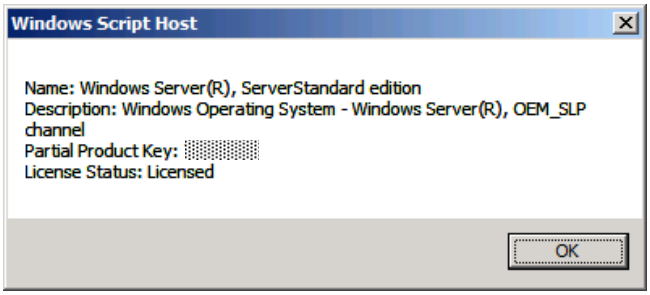
Windows activation is now complete.

(2) Server Core installations

1. At the command prompt, enter the following, and then press <Enter> key.
   `slmgr -dli`

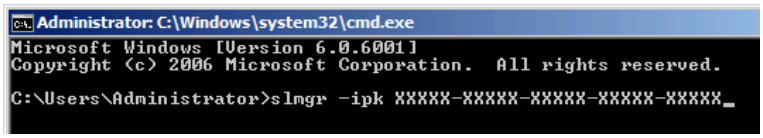


   If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure. Click [OK] to finish.


Windows Script Host
Name: Windows Server(R), ServerStandard edition
Description: Windows Operating System - Windows Server(R), OEM_SLP channel
Partial Product Key:
License Status: Licensed
OK

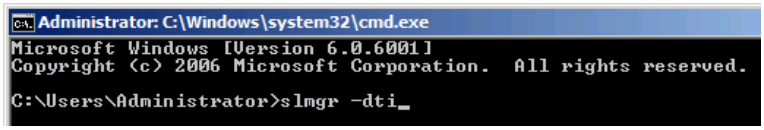
2. For installation from Backup DVD-ROM, replace the product key.

   At the command prompt, enter the following, and then press <Enter> key. Set the product key found on the COA label in *PID*.
   `slmgr -ipk PID`


Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.
C:\Users\Administrator>slmgr -ipk XXXXX-XXXXX-XXXXX-XXXXX-XXXXX

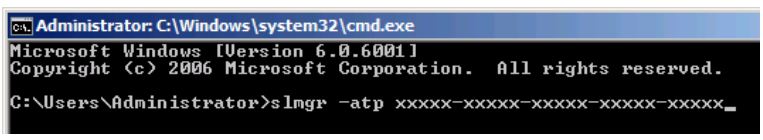
3. Obtain an installation ID for Windows activation.

   At the command prompt, enter the following, and then press <Enter> key.
   `slmgr -dti`


Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.
C:\Users\Administrator>slmgr -dti

4. Reference `%systemroot%\system32\slui\phone.inf` for the telephone number of the license authentication customer service.
5. Call the above number, inform the representative of the installation ID which you obtained in step 3, and receive a confirmation ID.
6. Type the confirmation ID you received in step 5.

   At the command prompt, enter the following, and then press <Enter> key. *CID* is the confirmation ID that you received from customer service.
   `slmgr -atp CID`


Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.
C:\Users\Administrator>slmgr -atp xxxxx-xxxxx-xxxxx-xxxxx-xxxxx

Windows activation is now complete.

5.8 Applying Service Pack

When applying Service Pack 2, refer to the following Microsoft website:
http://support.microsoft.com/kb/948465/en-us

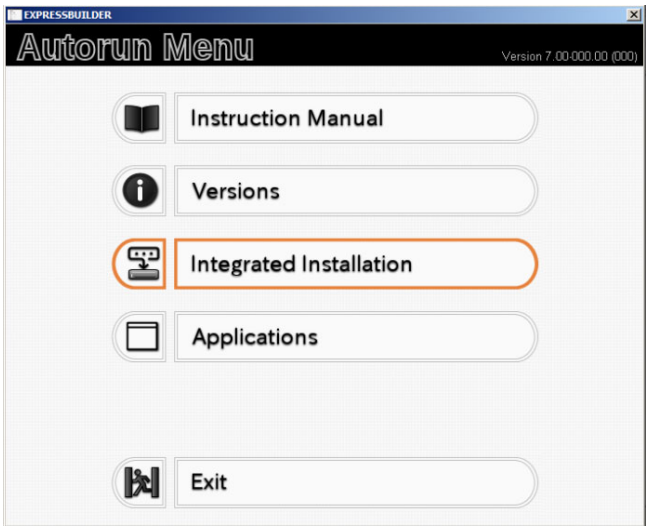
5.9 Installing the Applications

EXPRESSBUILDER contains applications including NEC ESMPRO Agent and NEC ESMPRO Manager. Some applications stored in EXPRESSBUILDER can be installed collectively by performing the procedures described below. When installing these applications individually, see *Chapter 2* (*Installing Bundled Software*).

1. Log on to the system with the built-in administrator, which has administrative privileges.

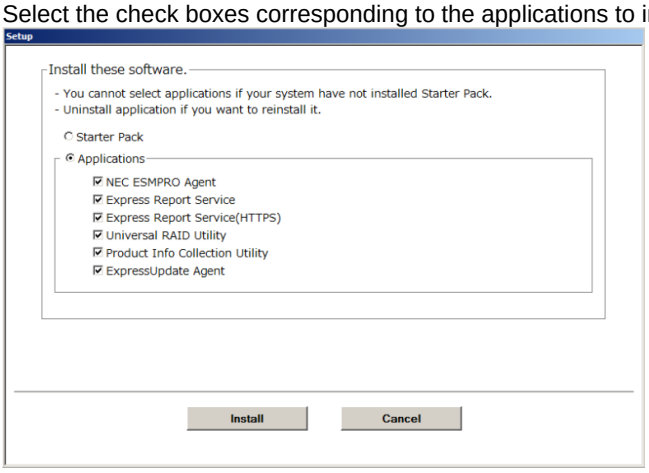
2. Insert the EXPRESSBUILDER DVD into the optical disk drive.

3. Click **Integrated Installation** on the menu.



4. On the following screen, make sure that the **Applications** option is selected.

   Select the check boxes corresponding to the applications to install, and then click **Install**.



Note

- If Starter Pack is already installed, the **Applications** option is selected by default.
- Applications available for installation are selected by default.
- An application that has been already installed need to be uninstalled before installing it again.
- If your system environment does not satisfy the prerequisite for an application, you cannot install it. (For details, refer to the on-screen information and the relevant page of each application.)

The selected applications are automatically installed.

5. When a message appears, click **Restart**, and then remove the EXPRESSBUILDER disk from the optical disk drive.

Now installation of applications is completed.

5.10 Installation When Multiple Logical Drives Exist

Before starting installation, backup data for future use in case of data loss.

(1) Installation process

– Setup with EXPRESSBUILDER

Important

Before starting setup, be sure to disconnect hard disk drives from the RAID Controller that is not to be setup. Install those hard disk drives after setup has completed.
Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally.

Refer to *Chapter 1 (5.2 Setup with EXPRESSBUILDER)*, and proceed with setup.

In this case, EXPRESSBUILDER installs the Windows on the first detected hard disk drive or logical drive.

– Setup with Windows standard installer

1. Refer to *Chapter 1 (5.3 Setup with Windows Standard Installer)*, and start setup.
2. When the following message appears, select the partition to which you want to set up the operating system.

```
Select the location to which Windows will be installed
```

The order and numbers of the disks displayed on the screen **might not match the server's slot** of the hard disk drives. **Distinguish between the hard disk drives by viewing the hard disk drive capacity and partition size** displayed on the screen, and then select a drive to install the Windows system. Selecting an improper drive might cause an unintentional corruption of the existing data. Be careful when selecting a hard disk drive on which to install the system.

Important

- **For details, refer to the following Microsoft website:**
  http://support.microsoft.com/kb/937251/en-us
- **You cannot edit the drive letters for the system volume or boot volume after setup is complete. Make sure that the drive letters assigned in this window are correct, and then proceed with setup.**

3. Refer to *Chapter 1 (5.3 Setup with Windows Standard Installer)*, and proceed to setup Windows with Windows standard installer and the instructions.

Tips

The drive letter might change after installation. If you want to change the drive letter, use the procedure shown in *Changing drive letter assignments* below.

(2) Changing drive letter assignments

To change the drive letter, follow the steps below. But these steps cannot change drive letter assignments for the system volume or boot volume. If you want to change them, re-install the Windows.

1. From the **Start** menu, right-click **Computer** and then select **Management**. Next, launch **Server Manager**.
2. From the window on the left, select **Storage** and then **Disk Management**.
3. Right-click the volume whose drive letter you want to change, and then select **Change drive letter and path**.
4. Click [Change].
5. Click [Assign next drive letter], and then select the drive letter you want to assign.
6. Click [OK].
7. When the following message appears, read the contents and then click [OK].

```
Some programs are dependent on drive letters, and may
not run properly. Continue?
```

8. Close the Server Manager.

6. Setup for Solving Problems

We recommend installing the following features for solving the server failure quickly.

6.1 Specifying Memory Dump Settings (Debug Information)

This section explains the procedures for collecting a memory dump (debug information) in the server.

Important

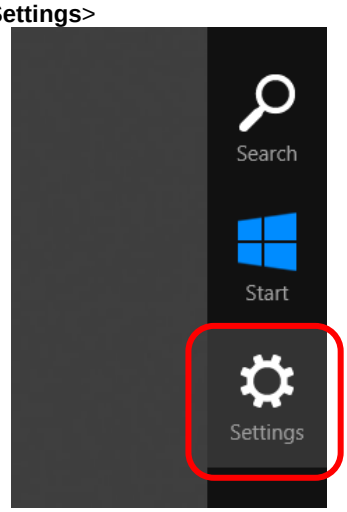
- **Memory dumps must be collected by a serviceman. You only specify the settings for the memory dump.**
- **When you restart the system to save the memory dump, a message informing you that the system is short of virtual memory might appear. Ignore this message and proceed with the restart. If you reset or restart the system again, the memory dump might not be saved normally.**

6.1.1 For Windows Server 2012

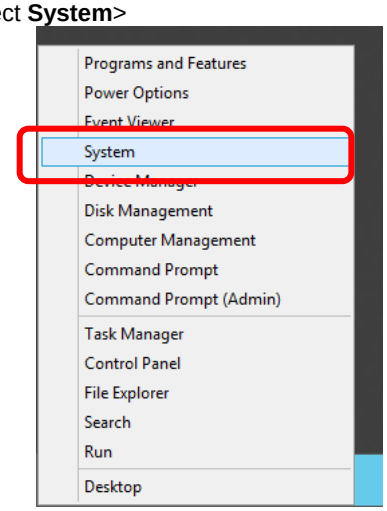
Follow the procedure below to specify the memory dump settings.

1. On the Charms bar, click **Settings**.
   To go to step 5 directly, right-click the left bottom of the screen, and then click **System**.

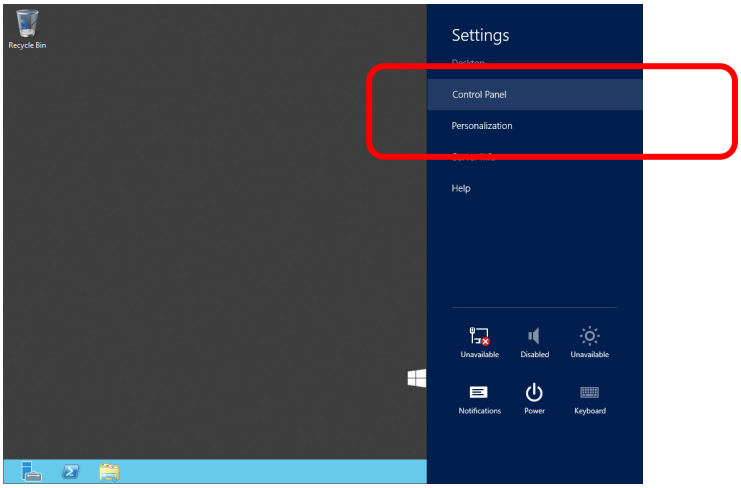
<Select **Settings**>



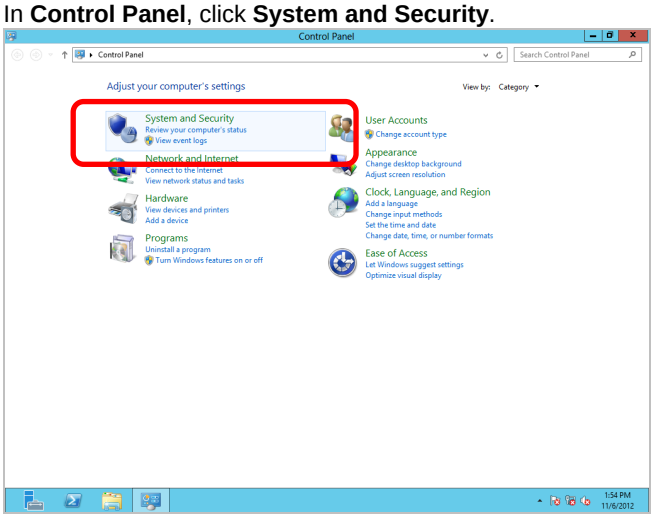
<Select **System**>



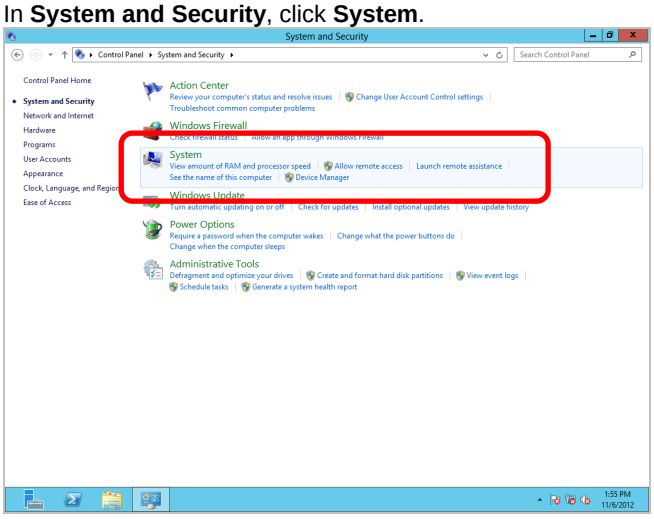
2. In **Settings**, click **Control Panel**.



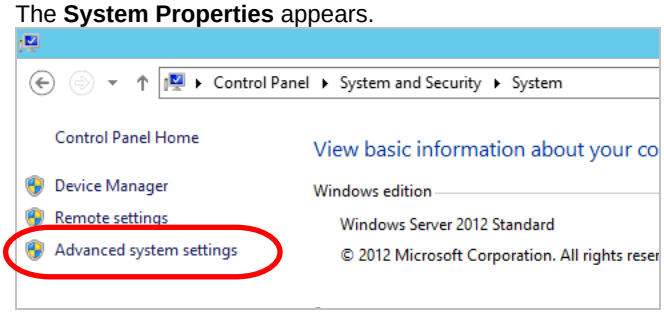
3. In **Control Panel**, click **System and Security**.



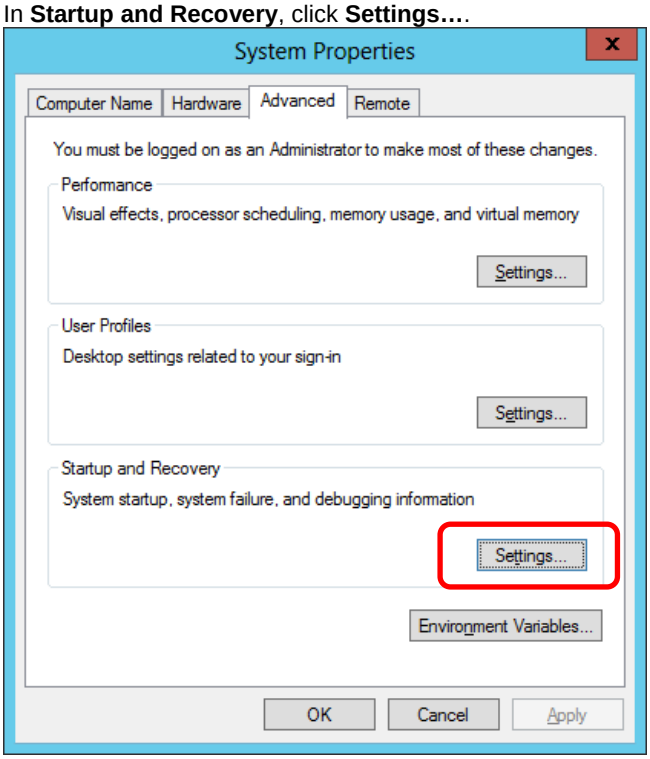
4. In **System and Security**, click **System**.



5. In **System**, click **Advanced system setting**.
   The **System Properties** appears.


Control Panel ▸ System and Security ▸ System
Control Panel Home
Device Manager
Remote settings
Advanced system settings
View basic information about your co
Windows edition
Windows Server 2012 Standard
© 2012 Microsoft Corporation. All rights reser

6. In **Startup and Recovery**, click **Settings…**.



7. Type a file name to save the debug information, and then click **OK**.

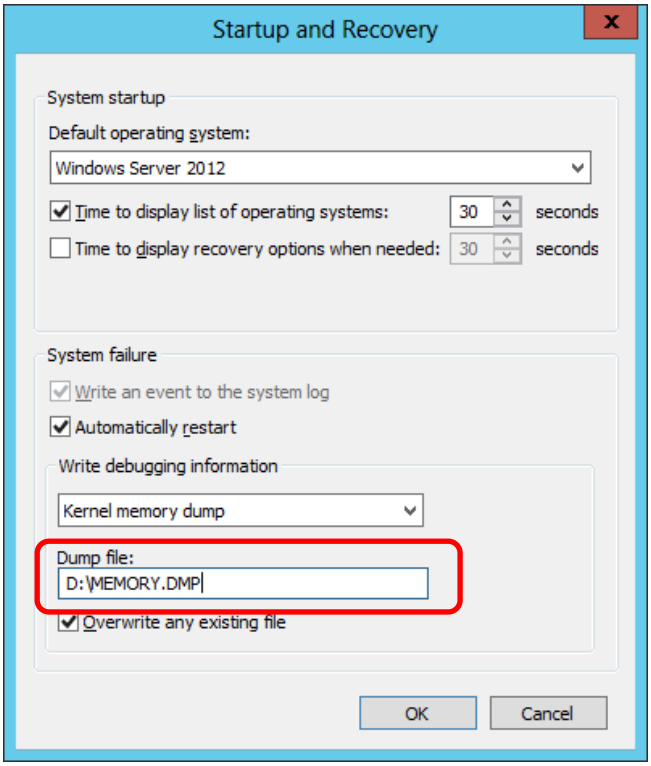
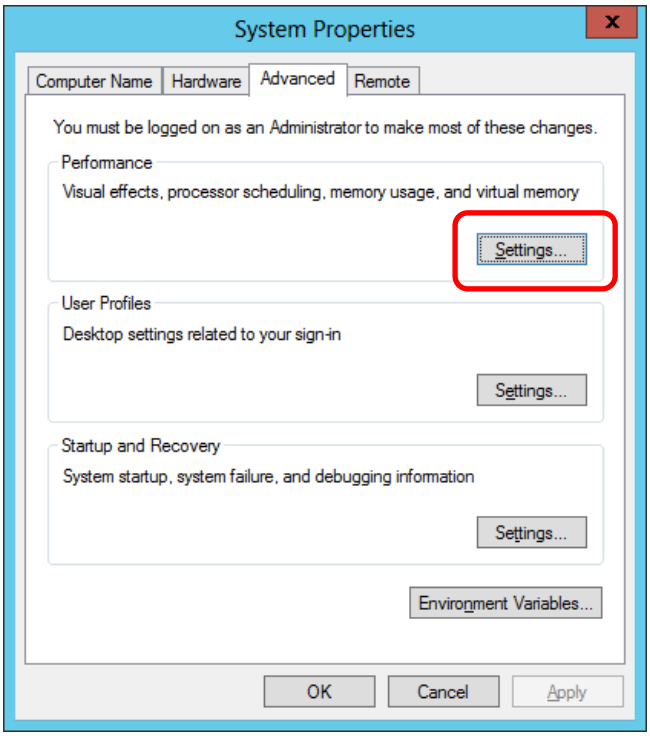


Fig. For example: <Save information in drive D: with the file name "MEMORY.DMP">

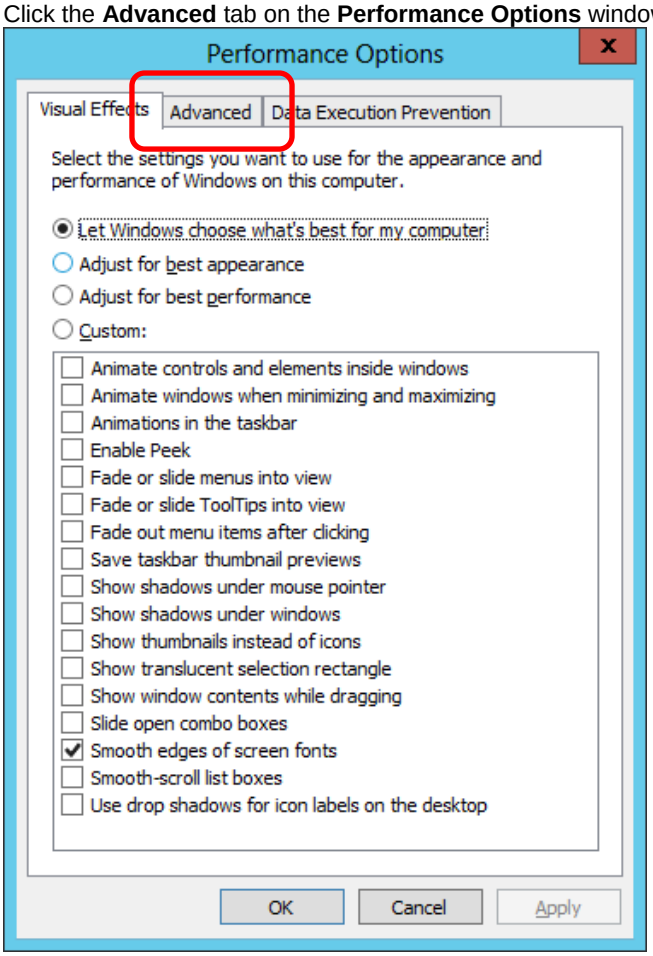
Note the following when specifying a dump file:

- We recommend specifying **Kernel memory dump** of **Write debugging information**.
- Specify a drive that has a free space of at least "the memory capacity mounted on the server + 400 MB".
- The size of the debug information (memory dump) changes if DIMM is added. Make sure that the free space of the drive to store the debug information (memory dump) is sufficient.

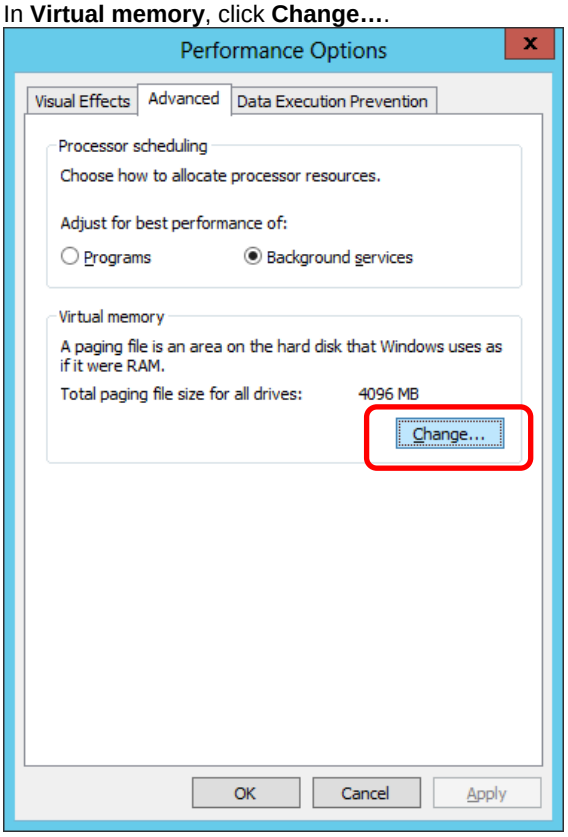
8. In **Performance**, click **Settings**.
   The **Performance Options** window appears.



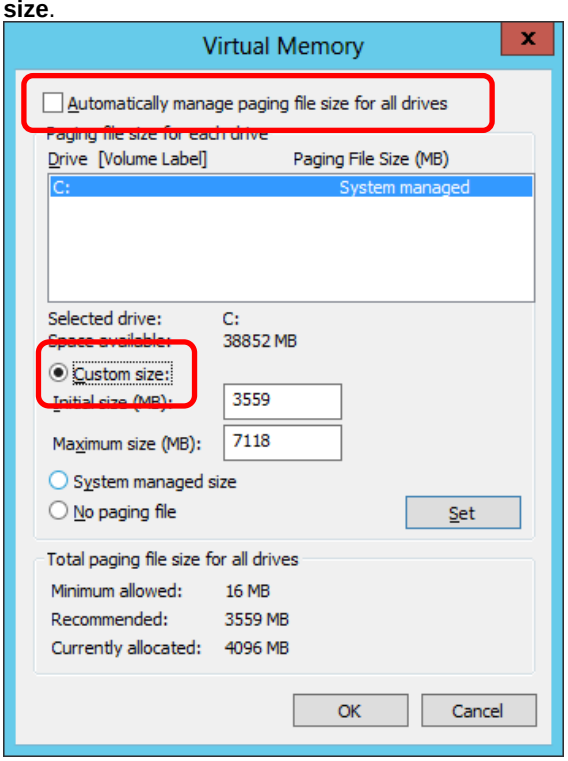
9. Click the **Advanced** tab on the **Performance Options** window.


Performance Options
Visual Effects
Advanced
Data Execution Prevention
Select the settings you want to use for the appearance and performance of Windows on this computer.
Let Windows choose what's best for my computer
Adjust for best appearance
Adjust for best performance
Custom:
Animate controls and elements inside windows
Animate windows when minimizing and maximizing
Animations in the taskbar
Enable Peek
Fade or slide menus into view
Fade or slide ToolTips into view
Fade out menu items after clicking
Save taskbar thumbnail previews
Show shadows under mouse pointer
Show shadows under windows
Show thumbnails instead of icons
Show translucent selection rectangle
Show window contents while dragging
Slide open combo boxes
Smooth edges of screen fonts
Smooth-scroll list boxes
Use drop shadows for icon labels on the desktop
OK
Cancel
Apply

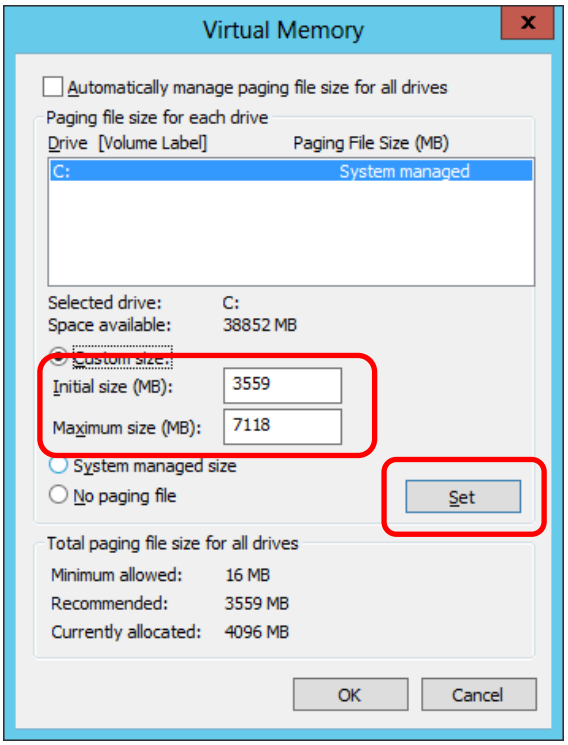
10. In **Virtual memory**, click **Change…**.



11. Clear the **Automatically manage paging file size for all drivers** check box, and then click **Custom size**.



12. In **Paging file size for each drive**, enter the value equal or larger than the recommended value for **Initial size**, and the value larger than **Initial size** for **Maximum size**, and then click **Set**.



Note the following when specifying a paging file size:

- The paging file is used to collect debug information (dump file). The boot volume must have a paging file of its initial size (Total capacity of physical memory mounted + 400MB or larger) is enough to store the dump file. If the paging file size is insufficient, correct debug information cannot be collected due to a shortage of virtual memory. Make sure to set a sufficient paging file size (recommended size: Total capacity of physical memory mounted * 1.5).
- See "System Partition" in Chapter 1 (3.1 Before Starting Setup) for recommended value.
- When DIMM is added, re-specify the paging file according to the increased memory size.

13. Click **OK**.
    If a message to restart Windows appears, restart the system according to on-screen message.

Specification of the memory dump settings is now complete.

6.1.2 For Windows Server 2008 R2

Follow the procedure below to specify the memory dump settings.

1. On the **Start** menu, click **Control Panel**.
   The Control Panel window appears.
2. On the Control Panel window, click **System and Security**.

   Tips If **View by** is not **Category**, select **System** from **Control Panel** directly.

3. Click **System**.
4. Click **Advanced system settings**.
   The System Properties dialog box appears.
5. Click the **Advanced** tab, and then click **Settings** in **Startup and Recovery**.
6. Type a file name to store the debug information in the **Dump file** text box.

   For example: To store the debug information in D drive under the file name `MEMORY.DMP`:
   `D:\MEMORY.DMP`

   Note the following when specifying a dump file.

   - For the Write debugging information drop-down list, we recommend specifying Complete memory dump. If the mounted memory size is greater than 2 GB, Complete memory dump cannot be specified because it is not displayed on the drop-down list. In this case, specify Kernel memory dump instead.
   - Specify a drive that has a free space of at least "the memory capacity mounted on the server + 300 MB".
   - The size of the debug information (memory dump) changes when DIMM is added. Make sure that the free space of the drive to store the debug information is sufficient. If the mounted memory exceeds 2GB, specify Kernel memory dump.
7. In **Performance**, click **Settings**.
   The Performance Options dialog box appears.
8. Click the **Advanced** tab in the Performance Options dialog box.
9. In **Virtual memory**, click **Change**.
10. Clear the **Automatically manage paging file size for all drives** check box, and then click **Custom size**.
11. In **Paging file size for each drive**, specify as follows:

    For the **Initial size** text box, type a value equal to or greater than the **Recommended** value shown in **Total paging file size for all drives**.

    For the **Maximum size** text box, type a value equal to or greater than the value specified in **Initial size**.

    After specifying the above values, click **Set**.

    Note the following when specifying a paging file size.

    - The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the Windows partition paging file must be large enough to store dump files. Make sure to set a sufficient paging file size. If the paging file size is insufficient, correct debug information cannot be collected due to a shortage of virtual memory.
    - For details about the Recommended value in the Total paging file size for all drives area, see System partition size in Before Starting Setup.
    - When DIMM is added, re-specify the paging file according to the increased memory size.

12. Click **OK**.

    The message to restart the system appears depending on the modifications made.
    In this case, restart the system.

Specification of the memory dump settings is now complete.

6.1.3 For Windows Server 2008

Follow the procedure below to specify the memory dump settings.

1. On the **Start** menu, clickt **Control Panel**, and then click **System**.
   The System dialog box appears.
2. Click **Advanced system settings**.
   The System Properties dialog box appears.
3. Clickt the **Advanced** tab, and then click **Settings** in **Startup and Recovery**.
4. Type a file name to store the debug information in the **Dump file** text box.

   For example: To store the debug information in D drive under the file name `MEMORY.DMP`:
   `D:\MEMORY.DMP`

   Note the following when specifying a dump file.

   For Windows Server 2008 64-bit Edition

   - For the Write debugging information drop-down list, we recommend specifying Complete memory dump. If the mounted memory size is greater than 2 GB, Complete memory dump cannot be specified because it is not displayed on the drop-down list. In this case, specify Kernel memory dump instead.
   - Specify a drive that has a free space of at least "the memory capacity mounted on the server + 300 MB".
   - The size of the debug information (memory dump) changes when DIMM is added. Make sure that the free space of the drive to store the debug information is sufficient. If the mounted memory exceeds 2GB, specify Kernel memory dump.

   For Windows Server 2008 32-bit Edition

   - For the Write debugging information drop-down list, we recommend specifying Complete memory dump. If the mounted memory size is greater than 2 GB, Complete memory dump cannot be specified because it is not displayed on the drop-down list. In this case, specify Kernel memory dump instead.
   - Specify a drive that has a free space of at least "the memory capacity mounted on the server + 300 MB" (or 2048 MB + 300 MB if the memory size exceeds 2 GB).
   - The size of the debug information (memory dump) changes when DIMM is added. Make sure that the free space of the drive to store the debug information is sufficient. If the mounted memory exceeds 2GB, specify Kernel memory dump.

5. In **Performance**, click **Settings**.
   The Performance Options dialog box appears.
6. Click the **Advanced** tab on the Performance Options dialog box.

7. In **Virtual memory**, click **Change**.
8. Clear the **Automatically manage paging file size for all drives** check box, and then click **Custom size**.
9. In **Paging file size for each drive**, specify as follows:

   For the **Initial size** text box, type a value equal to or greater than the **Recommended** value shown in **Total paging file size for all drives**.

   For the **Maximum size** text box, type a value equal to or greater than the value specified in **Initial size**.

   After specifying the above values, click **Set**.

   Note the following when specifying a paging file size.

   - The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the boot volume paging file must be large enough to store dump files. Make sure to set a sufficient paging file size. If the paging file size is insufficient, correct debug information cannot be collected due to a shortage of virtual memory.
   - For details about the Recommended value in the Total paging file size for all drives area, see System partition size in Before Starting Setup.
   - When DIMM is added, re-specify the paging file according to the increased memory size.

10. Click **OK**.

    The message to restart the system appears depending on the modifications made.
    In this case, restart the system.

Specification of the memory dump settings is now complete.

6.2 How to Create a User-mode Process Dump File

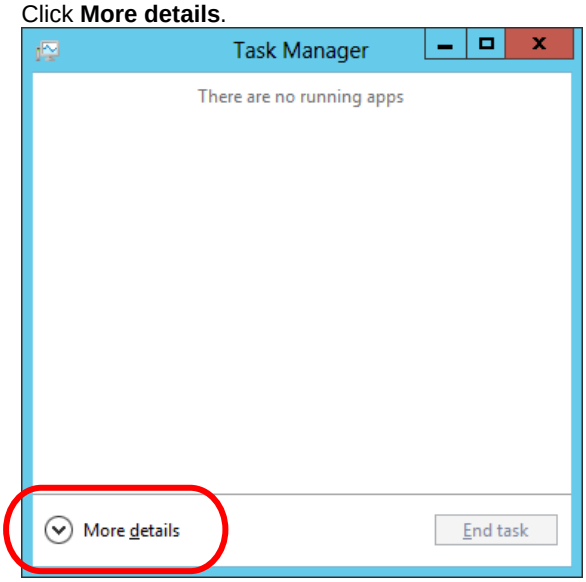
The user-mode process dump file records information when an application error occurs.

If an application error occurs, get user-mode process dump information using the following procedures without closing the pop-up window that reported the error:

6.2.1 For Windows Server 2012

1. Right-click an empty area of the taskbar and then click **Task Manager** or press <Ctrl> + <Shift> + <Esc> keys to start **Task Manager**.

2. Click **More details**.



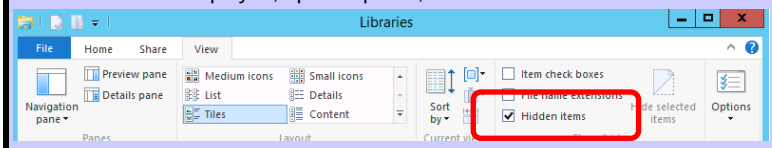
3. Click the **Processes** tab.

4. Right-click the name of the process that you want to get dump information for, and then click **Create Dump File**.

5. A dump file for the process is created in the following folder:

   C:\Users*user name*\AppData\Local\Temp

Tips If the folder is not displayed, open Explorer, select **Hidden items** in the **View** tab.



Once the user-mode process dump file has been created, get the file from the folder shown in step 5.

6.2.2 For Windows Server 2008 R2 and Windows Server 2008

1. Right-click an empty area of the taskbar and then click **Task Manager** or press <Ctrl> + <Shift> + <Esc> keys to start **Task Manager**.
2. Click the **Processes** tab.
3. Right-click the name of the process that you want to get dump information for, and then click **Create Dump File**.
4. A dump file for the process is created in the following folder:
   C:\Users*user name*\AppData\Local\Temp

Tips

If the folder is not displayed, perform the following:

- For Windows Server 2008 R2:
  Open Explorer, click **Organize** and then **Folder and search options**. Click the **View** tab and then select **Show hidden files, folders, and drives**.
- For Windows Server 2008:
  Open Explorer, click **Folder and search options** on the **Tools** menu. Click the **View** tab and then select **Show hidden files and folders**.

Once the user-mode process dump file has been created, get the file from the folder shown in step 4.

For details about how to create a user-mode process dump file, refer to the following Microsoft Support web page:
How to create a user-mode process dump file in Windows Server 2008
http://support.microsoft.com/kb/949180/en-us

User-mode process dump file creation is now complete.

6.3 Installing Network Monitor

Utilizing Network Monitor helps you investigate and manage network troubles.

(This feature is not supported in Windows Server 2012 or later operating systems.)

(1) Setting up Network Monitor

Tips

Windows Server 2008 R2 and Windows Server 2008 do not provide Network Monitor.

To capture network traces on Windows Server 2008 R2 or Windows Server 2008, Microsoft Network Monitor must be installed using the procedure described below.

1. Download Network Monitor from the following Microsoft web page:
   http://support.microsoft.com/kb/933741/en-us
2. Run the downloaded file to start the installer.
   Follow the onscreen instructions to install Network Monitor.

Tips

If the Security Alert message appears, click **Run**.
In the setup format selection window, select **Complete**.

Network Monitor installation is now complete.

Tips

To uninstall Network Monitor, use **Programs and Features**.

(2) Capturing network traces

1. Click **Microsoft Network Monitor** on the **Start** menu to start Network Monitor.
2. Click **Create a new capture tab...** in the **Start Page** tab or click **New** on the **File** menu, click **Capture…**.
   A new tab for capturing network traces is created.
3. In **Select Networks**, select the network whose traces are to be captured.
4. Click **Start** on the **Capture** menu to start capturing the network traces.
5. Click **Stop** on the **Capture** menu to stop capturing the network traces.
6. Click **Save As…** on the **File** menu.
   The Save As dialog box appears. Click **All captured frames** in **Frame selection**, and then type a folder and file names.

Tips

The default folder is as follows:
`C:\Users\<User name>\Documents\Network Monitor 3\Captures`

7. Click **Save**.
   The network trace file is created in the folder specified in step 6.

The setup for capturing network traces is now complete.

7. Windows OS Parameter File

This section describes a parameter file for Windows OS.

7.1 Creating Windows OS Parameter File

If a parameter file is used when performing Setup with EXPRESSBUILDER, a series of setup procedures from installing of the OS to installing several utilities can be executed automatically just by pressing keys for confirmation.

The settings from the previous installation can also be used when re-installing the system.

It is therefore recommended to use a parameter file to set up the server.

7.1.1 How to create a parameter file

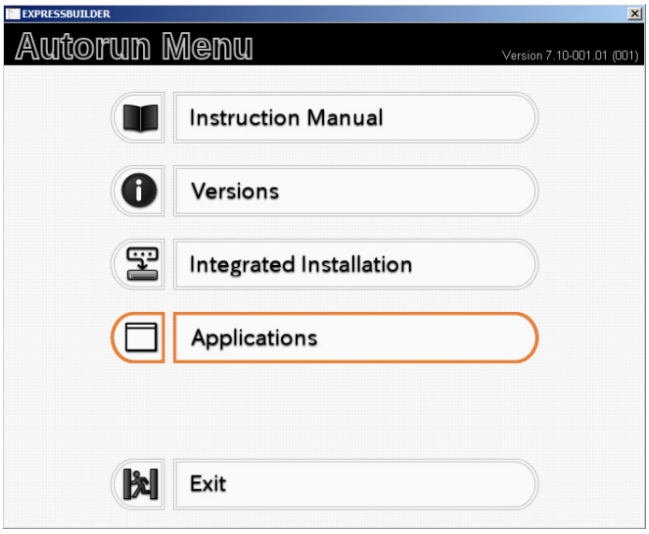
This section describes how to specify the setup information necessary for OS installation and how to create a parameter file.

Follow the procedure described below.

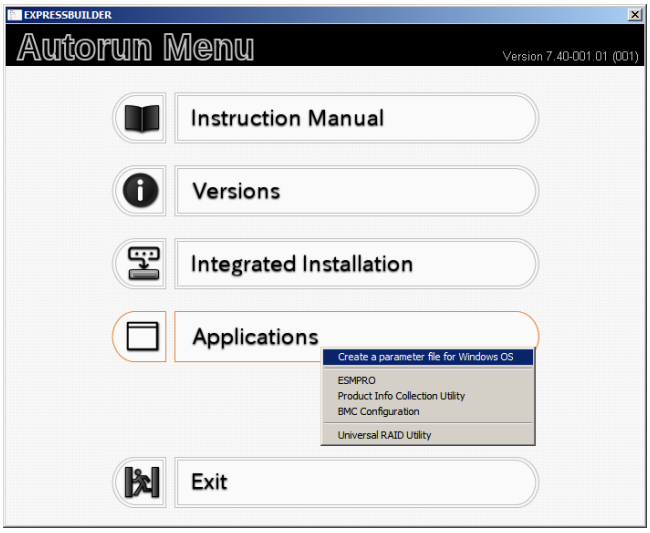
Important **Do not remove EXPRESSBUILDER DVD from the drive while creating a parameter file.**

Tips You can create a parameter file on Internet Explorer 7 or later.

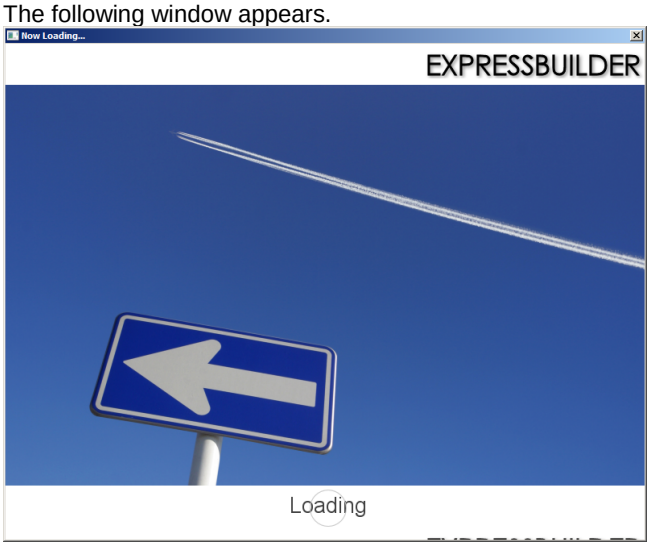
1. Start Windows.
2. Insert the supplied EXPRESSBUILDER DVD into the optical disk drive.
3. Click **Applications**.



4. Click **Create a parameter file for Windows OS**.

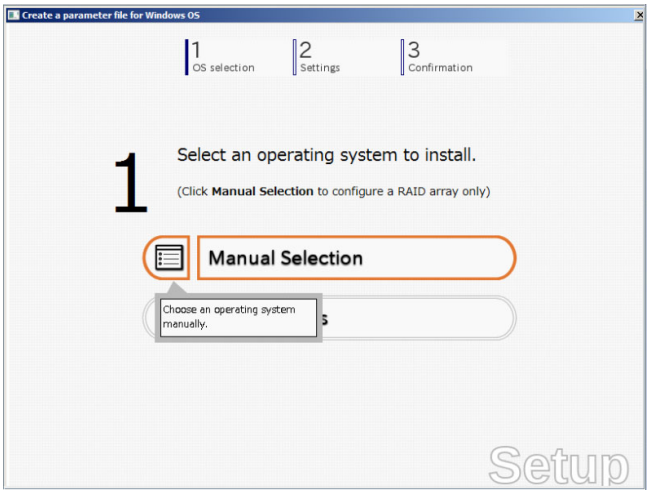


The following window appears.

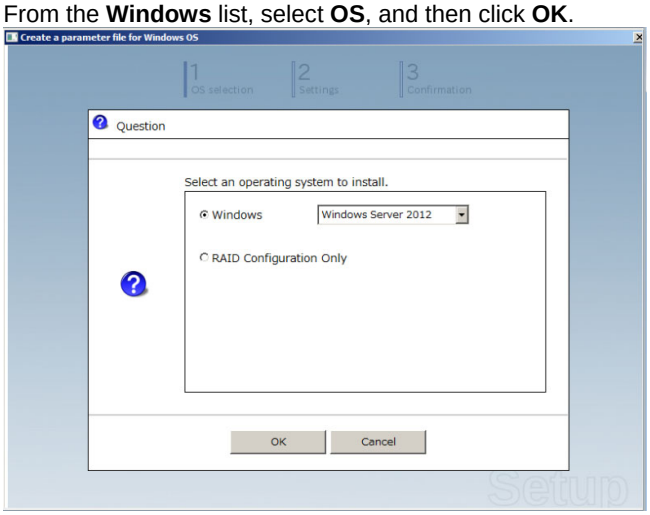


5. On the **OS selection** menu, select the OS to install or specify the parameter file.
   - ☐ When not using parameter file : Go to Step 6.
   - ☐ When using a parameter file : Go to Step 7.

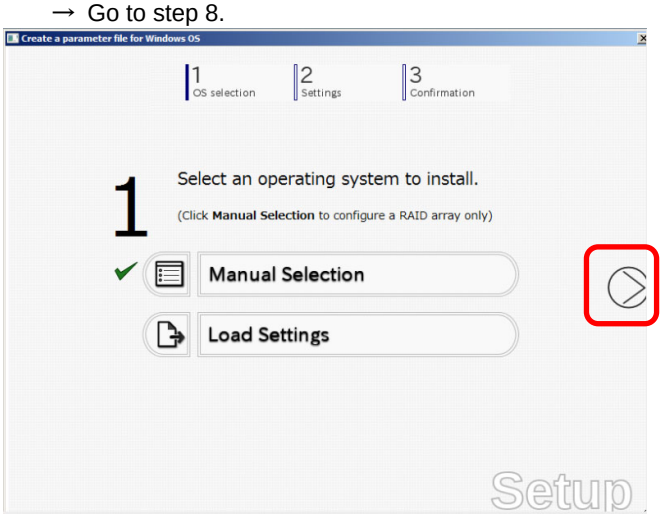
6. Click **Manual Selection**.



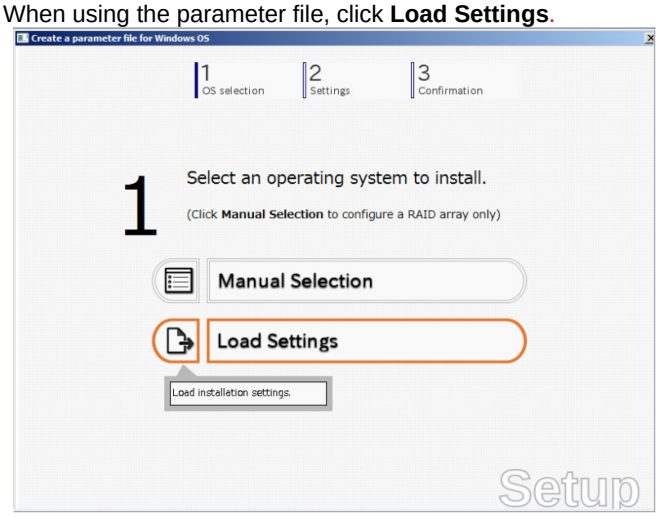
From the **Windows** list, select **OS**, and then click **OK**.



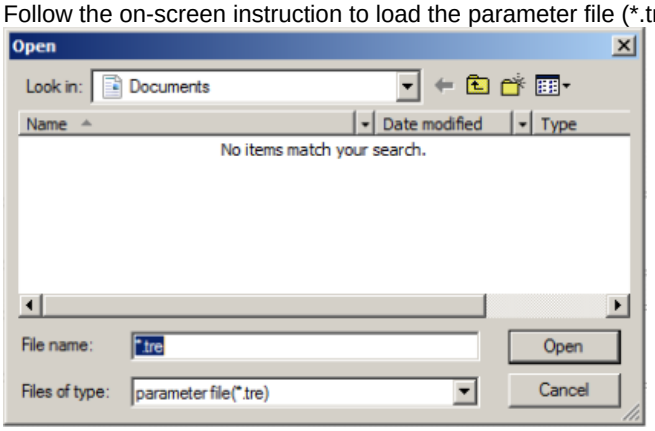
Click ▷ on the right side of the screen.
→ Go to step 8.



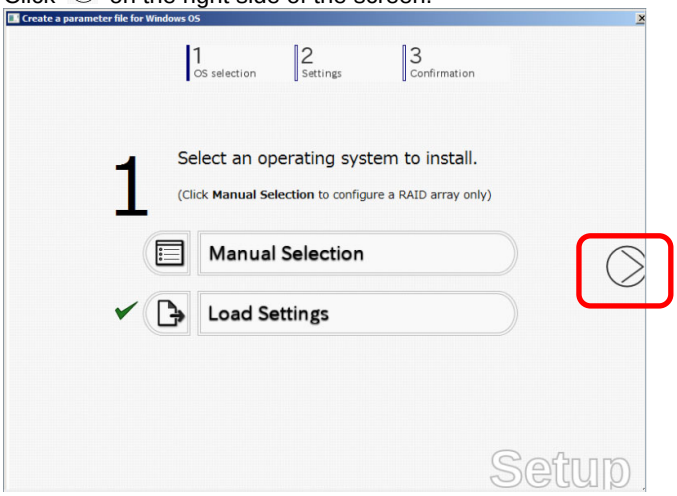
7. When using the parameter file, click **Load Settings**.



Follow the on-screen instruction to load the parameter file (*.tre).

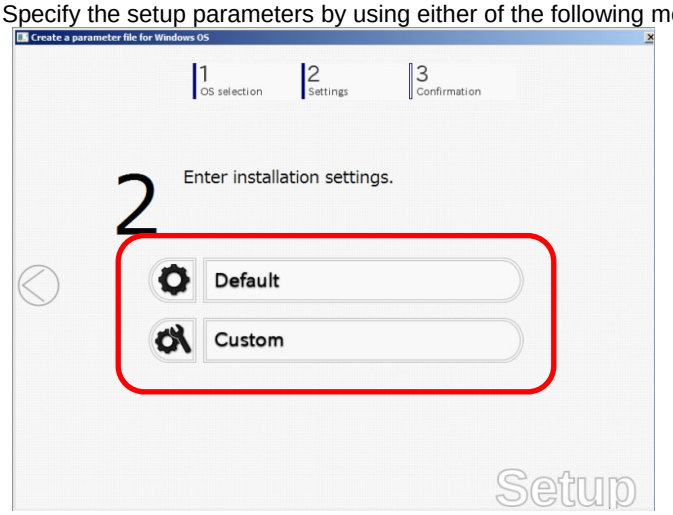


Click ▷ on the right side of the screen.



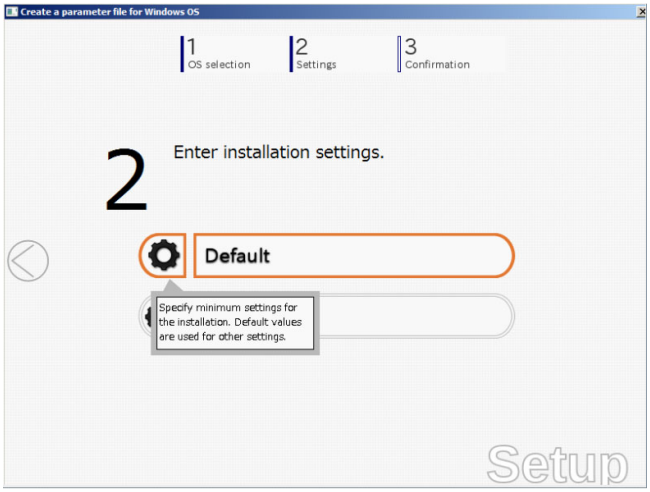
→ Go to step 9.

8. Specify the setup parameters by using either of the following methods:

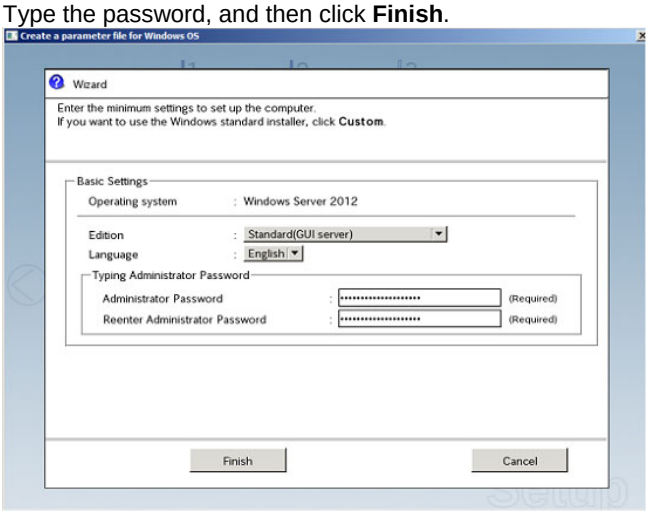


Use Default:

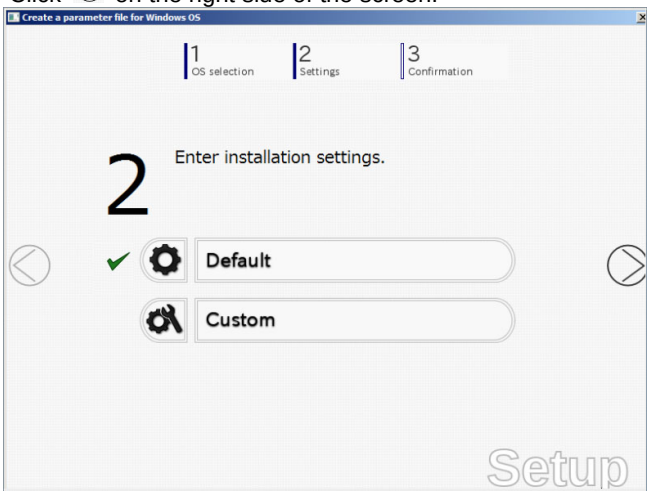
(1) Click **Default**.



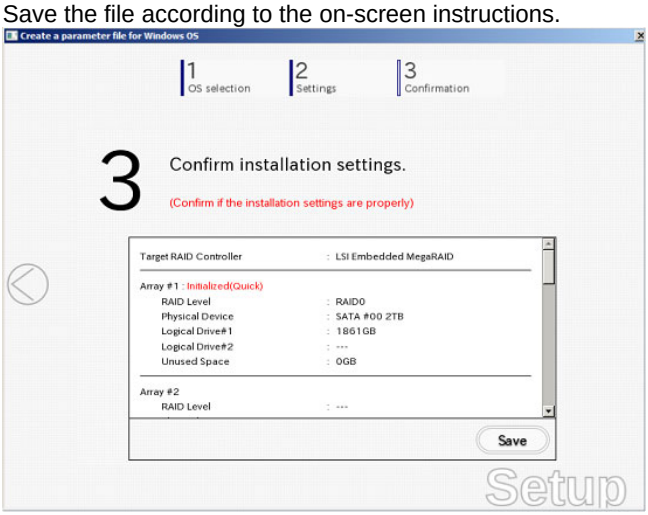
(2) Select an edition of the OS in the **Edition** list.
Type the password, and then click **Finish**.


Create a parameter file for Windows OS
Wizard
Enter the minimum settings to set up the computer.
If you want to use the Windows standard installer, click Custom.
Basic Settings
Operating system : Windows Server 2012
Edition : Standard(GUI server)
Language : English
Typing Administrator Password
Administrator Password : (Required)
Reenter Administrator Password : (Required)
Finish
Cancel

(3) Click ▷ on the right side of the screen.



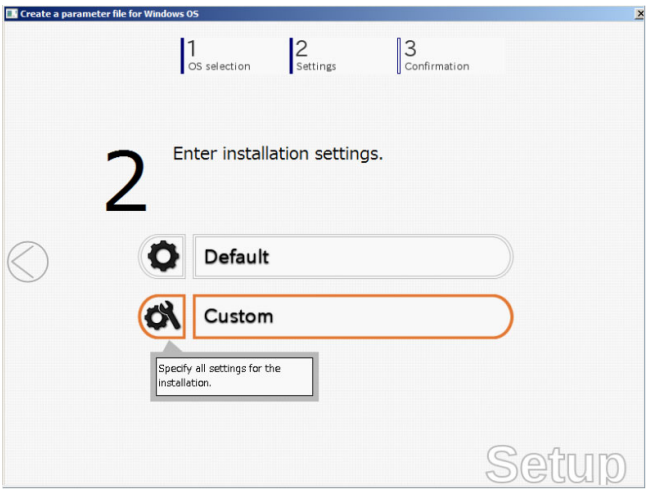
(4) Check the settings, and then click **Save**.
Save the file according to the on-screen instructions.



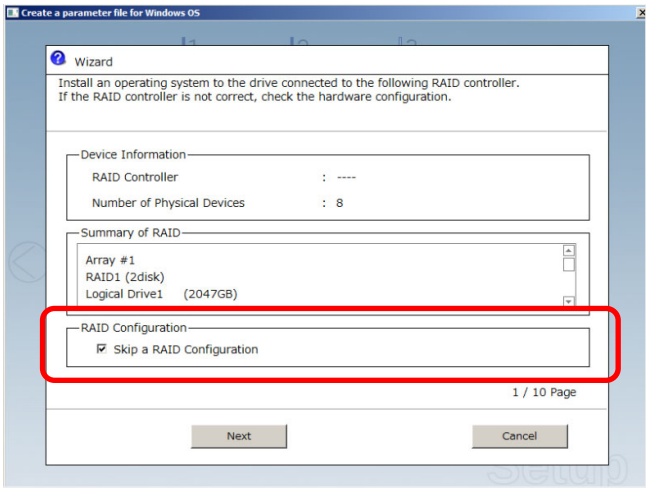
→ Go to step 10.

Use Custom:

(1) Click **Custom**.



(2) Use this menu to configure the RAID system with the RAID controller detected automatically.



When creating new logical drives

With the **Skip a RAID Configuration** check box cleared, click **Next**. Set up the logical drives in accordance with the wizard.

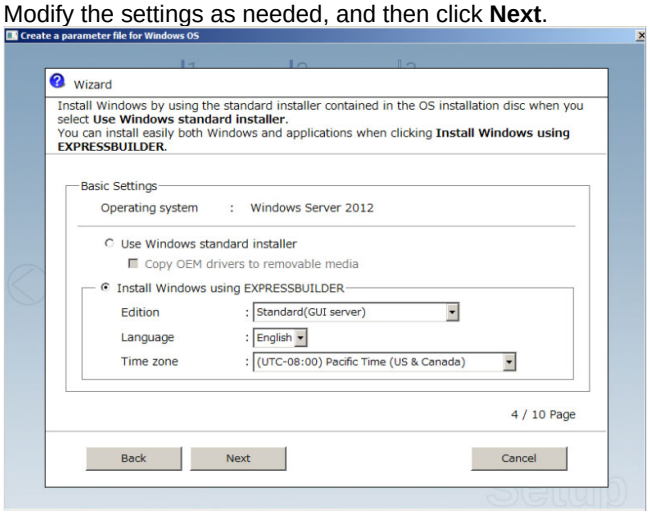
Important **If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.**

When skipping the creation of new logical drives

Select the **Skip a RAID Configuration** check box, and then click **Next**.

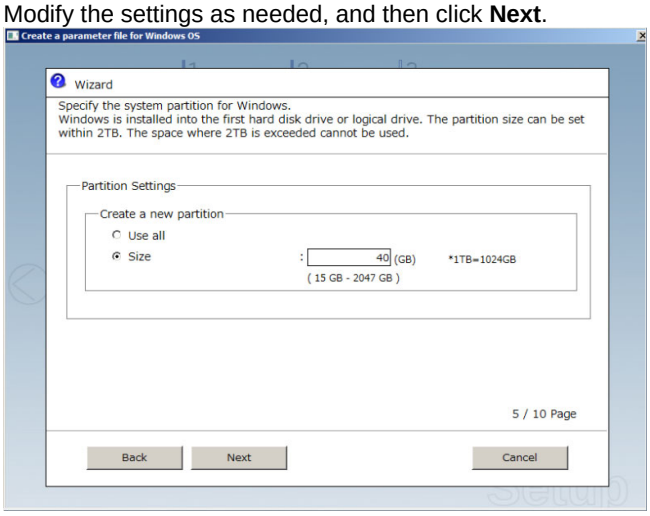
(3) Check the settings specified for **Basic Settings**.

Modify the settings as needed, and then click **Next**.


Create a parameter file for Windows OS
Wizard
Install Windows by using the standard installer contained in the OS installation disc when you select Use Windows standard installer.
You can install easily both Windows and applications when clicking Install Windows using EXPRESSBUILDER.
Basic Settings
Operating system : Windows Server 2012
Use Windows standard installer
Copy OEM drivers to removable media
Install Windows using EXPRESSBUILDER
Edition : Standard(GUI server)
Language : English
Time zone : (UTC-08:00) Pacific Time (US & Canada)
4 / 10 Page
Back
Next
Cancel

(4) Check the settings specified for **Partition Settings**.

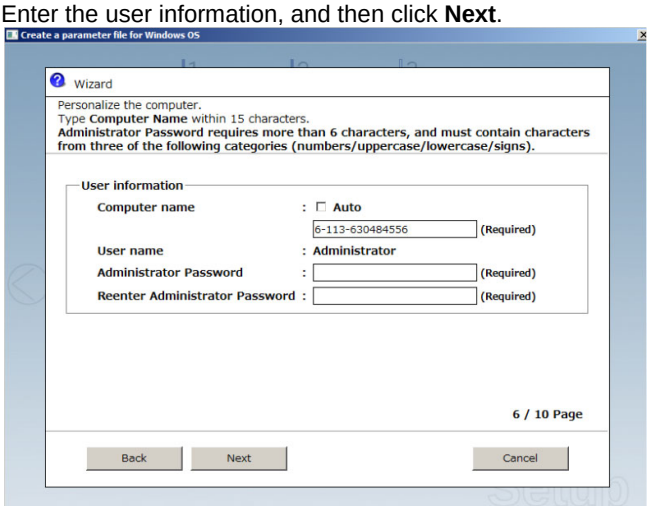
Modify the settings as needed, and then click **Next**.


Create a parameter file for Windows OS
Wizard
Specify the system partition for Windows.
Windows is installed into the first hard disk drive or logical drive. The partition size can be set within 2TB. The space where 2TB is exceeded cannot be used.
Partition Settings
Create a new partition
Use all
Size : 40 (GB) *1TB=1024GB
(15 GB - 2047 GB)
5 / 10 Page
Back
Next
Cancel

Important

- **Backing up user data, as needed, is recommended.**
- **Partition size**
  - **Specify a partition size larger than the minimum required for installing the operating system. (Refer to *Chapter 1 (Before Starting Setup)*.)**
  - **The maximum partition size is 2,097,152 MB.**
- **If you select *Create a new partition* under *Partition Settings*, the entire contents of the hard disk drive will be deleted.**

(5) Enter the user information, and then click **Next**.


Create a parameter file for Windows OS
Wizard
Personalize the computer.
Type Computer Name within 15 characters.
Administrator Password requires more than 6 characters, and must contain characters from three of the following categories (numbers/uppercase/lowercase/signs).
User information
Computer name : Auto
6-113-630484556 (Required)
User name : Administrator
Administrator Password : (Required)
Reenter Administrator Password : (Required)
6 / 10 Page
Back
Next
Cancel

Note

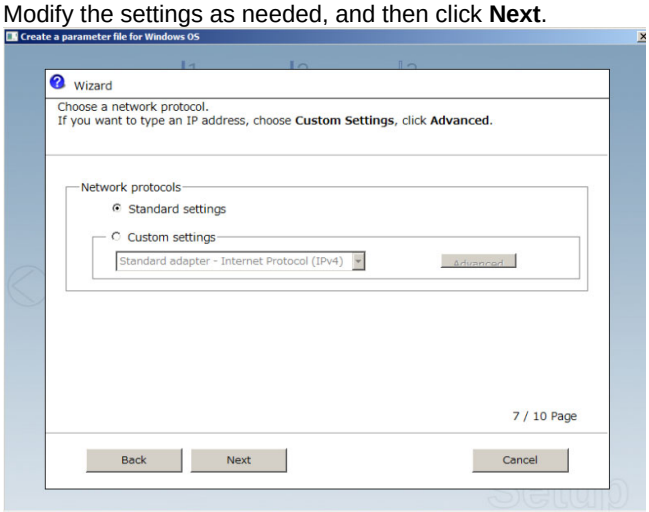
Computer name and Administrator Password are required parameters.
Enter Administrator Password that satisfies the following conditions:

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

Tips

- The Computer name has been assigned by automatic assignment function. If you need to assign another computer name, remove the checkmark from "Auto", and enter the desired computer name.
- If a parameter file is used for setup or if you return to a previous screen, •••••• is displayed in the Administrator password and Reenter Administrator password text boxes.

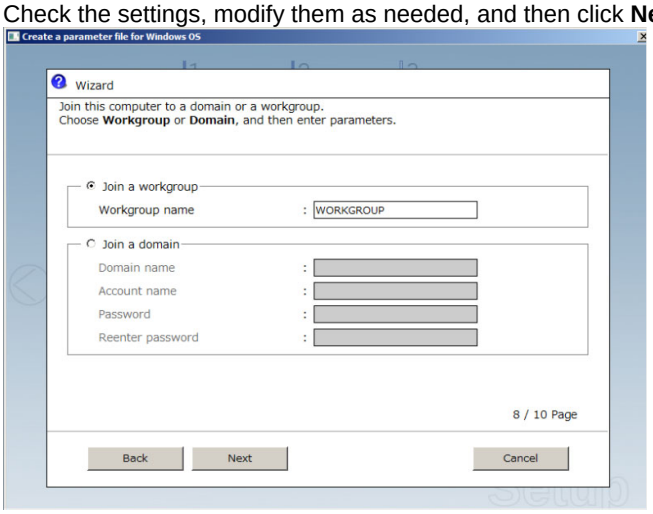
(6) Check the settings specified for **Network Protocols**.
Modify the settings as needed, and then click **Next**.



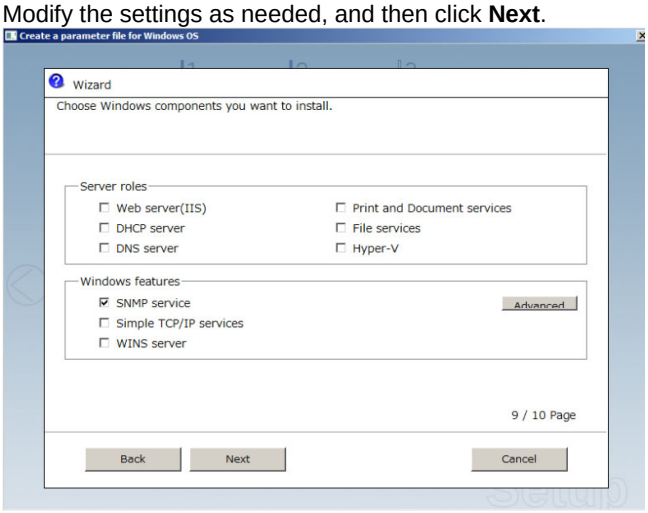
Tips

The order of entry in **Custom settings** may differ from the numbering of LAN ports.

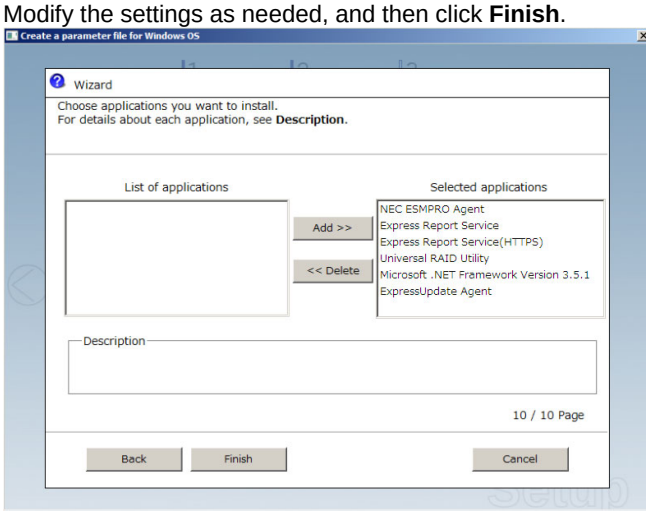
(7) Specify the domain or workgroup.
Check the settings, modify them as needed, and then click **Next**.



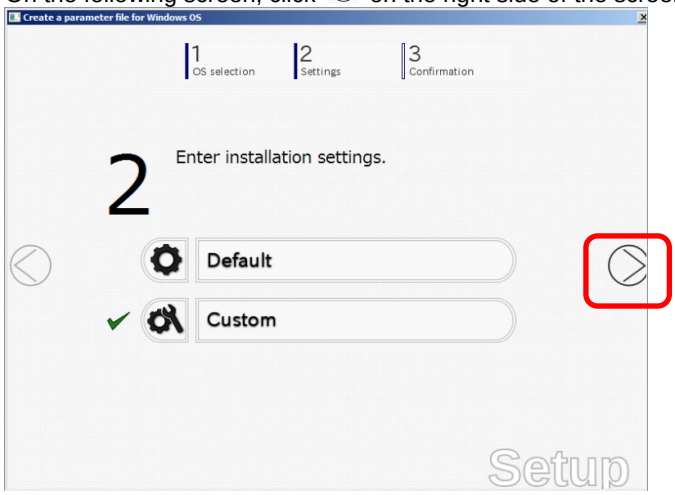
(8) Check the settings of Windows components.
Modify the settings as needed, and then click **Next**.



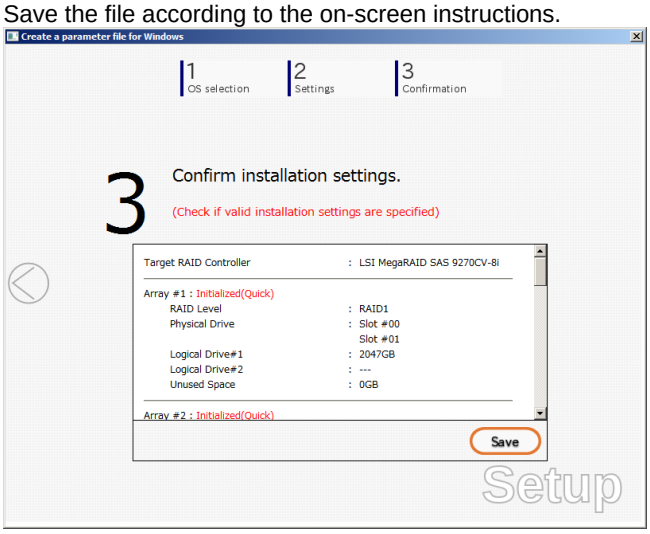
(9) Check the settings of applications.
Modify the settings as needed, and then click **Finish**.



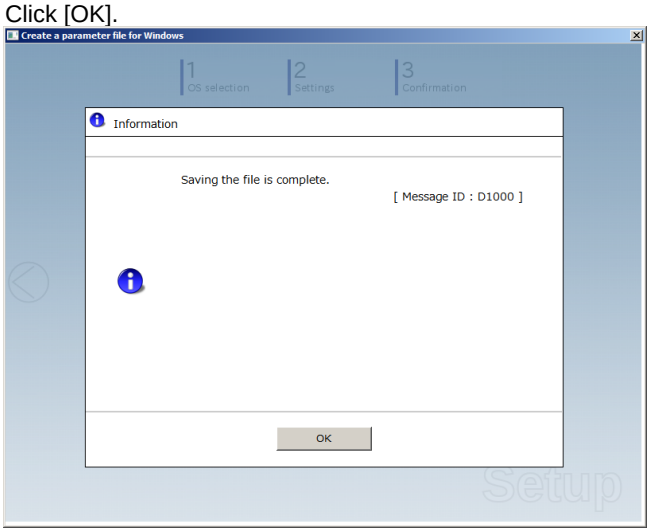
On the following screen, click ▷ on the right side of the screen.



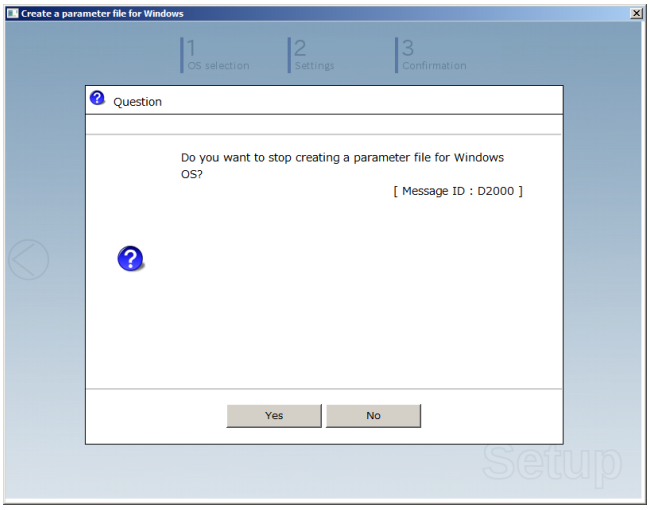
9. Check the settings, and then click **Save**.
Save the file according to the on-screen instructions.



10. Click [OK].



11. When the following message appears, click [Yes] to complete parameter file creation.



Parameter file creation is now complete.

NEC Express5800 Series
Express5800/R120e-1M, R120e-2M

2 Installing Bundled Software

This chapter explains the bundled software and how to install them.

1. **Bundled Software for the server**
   Describes the bundled software to be installed in the server.

2. **Bundled software Applied to PC for Management**
   Describes the bundled software to be installed in “PC for Management” that is used to monitor and manage the server.

1. Bundled Software for the Server

This section explains the software bundled in the server.

1.1 NEC ESMPRO Agent (for Windows)

NEC ESMPRO Agent (for Windows) is an application used to monitor the server.

You can install it automatically when Windows OS is installed by using EXPRESSBUILDER.

When installing NEC ESMPRO Agent (for Windows) individually, see *"NEC ESMPRO Agent Installation Guide (Windows)"* in EXPRESSBUILDER.

1.2 NEC ESMPRO Agent Extension

You can manage the server remotely by using NEC ESMPRO Agent Extension with NEC ESMPRO Manager monitoring the server's BMC.

For details about NEC ESMPRO Agent Extension, see "*NEC ESMPRO Agent Extension Installation Guide*" in EXPRESSBUILDER.

1.3 BMC Configuration

You can specify configuration data to the BMC of the server by using BMC Configuration.

For details about BMC Configuration, see "*BMC Configuration User's Guide*" in EXPRESSBUILDER.

1.4 NEC ExpressUpdate Agent

You can easily download, manage and update the firmware or the software installed in this server by using NEC ExpressUpdate Agent.

For details about NEC ExpressUpdate Agent, see "*NEC ExpressUpdate Agent Installation Guide*" in EXPRESSBUILDER.

Important **Updates are available for some firmware and software that do not support NEC ExpressUpdate. Refer to the following website to install these packages.**

http://www.nec.com/global/prod/express/index.html

1.5 Universal RAID Utility

Universal RAID Utility is an application used to manage and monitor the following RAID Controllers:

- N8103-161 RAID Controller (1GB, RAID 0/1/5/6)
- N8103-168 RAID Controller (1GB, RAID 0/1/5/6)
- N8103-172 RAID Controller (512MB, RAID 0/1)
- N8103-173 RAID Controller (512MB, RAID 0/1/5/6)
- N8103-174 RAID Controller (1GB, RAID 0/1/5/6)

For details about Universal RAID Utility, see "*Universal RAID Utility User's Guide*" in EXPRESSBUILDER.

If the system requirements for Universal RAID Utility described in *Universal RAID Utility User's Guide* differ from *User's Guide* of the server, follow *User's Guide* of the server.

1.5.1 Setup of Universal RAID Utility

This section describes setup of Universal RAID Utility.

(1) Setup for BTO (Built To Order) models

If you purchased a BTO model configured with a RAID System, Universal RAID Utility is already installed. You do not need to install Universal RAID Utility for such models.

(2) Setup with EXPRESSBUILDER

You can easily install Universal RAID Utility by using EXPRESSBUILDER. Universal RAID Utility is installed along with Windows when using EXPRESSBUILDER.

(3) Setup using Universal RAID Utility installer

The Universal RAID Utility installer can be launched from Autorun Menu of EXPRESSBUILDER. Choose **Integrated Installation** and then follow the dialog box. If you want to uninstall Universal RAID Utility or install it individually, click **Applications** on Autorun Menu.

- **Microsoft .NET Framwork**
  To use the RAID Viewer and Log Viewer, "Microsoft .NET Framework Version 2.0 to 3.5" is required. Windows Server 2008 and Windows Server 2008 R2 include "Microsoft .NET Framework 2.0 to 3.5".

  Install "Microsoft .NET Framework Versions 2.0 to 3.5" from the following web site when using Universal RAID Utility on Windows 2012 Server.

  http://msdn.microsoft.com/en-us/library/vstudio/hh506443.aspx

  (The web site explains for Windows 8, but the modules can be used for Windows 2012 Server)

1.5.2 Management by NEC ESMPRO Manager

NEC ESMPRO Manager Ver. 5.5 or later is used to remotely reference and monitor the RAID System that is managed by Universal RAID Utility.

For details about NEC ESMPRO Manager, see "*NEC ESMPRO Manager Installation Guide*".

1.6 Express Report Service / Express Report Service(HTTPS)

To avoid system failures or to maintain the server quickly, Express Report Service / Express Report Service(HTTPS) informs the support center of the failure information, preventive maintenance information by E-Mail or modem. If you want to use this service, contact your sales representative and install NEC ESMPRO Agent before using this service.

You can install this service with Windows OS installation when using EXPRESSBUILDER.

For details about Express Report Service / Express Report Service(HTTPS), see *"Express Report Service / Express Report Service(HTTPS) Installation Guide"* in EXPRESSBUILDER.

1.7 NEC Product Info Collection Utility

NEC Product Info Collection Utility can collect various information related to the server all at once. You can collect the server information (Product Info) for maintenance by using this utility.

1.7.1 Installation

Follow the steps below to install this utility.

1. Log on to Windows, and then insert EXPRESSBUILDER into the optical disk drive. Autorun Menu appears automatically.
2. Click **Applications** from the menu and then click **Product Info Collection Utility**.

   The installation starts. Follow the instructions in the dialog boxes until installation is complete.

   This utility is usually installed to the `C:\ezclct` folder.

Tips

- Log on to Windows with an account that has administrator privilege.
- The installation drive requires a free space of at least 2.5 GB.

1.7.2 Uninstallation

Uninstall the utility depending on the Windows installation type:

- **Full installation :**

  Choose **Add/Remove Programs** from **Control Panel** and then click **Product Info Collection Utility (Vx.x.x)**. Follow the instructions in the dialog boxes.

- **Server Core installation:**

  Run the following command at the command prompt:

```
Wmic product where name="Product Info Collection Utility" call uninstall
```

2. Bundled Software Applied to PC for Management

This section describes the bundled software required to configure “PC for Management” used to manage the server system.

2.1 NEC ESMPRO Manager

NEC ESMPRO Manager can remotely control and monitor the hardware and the RAID system of the server. To use these features, install the bundle software for the server such as NEC ESMPRO Agent.

For details about NEC ESMPRO Manager, see *NEC ESMPRO Manager Installation Guide* or online help.

2.2 Express Report Service(MG)

To avoid system failures or to maintain the server quickly, Express Report Service(MG) informs the support center of the failure information or preventive maintenance information by E-Mail or Modem.

To use this feature, NEC ESMPRO Agent is required because Express Report Service usually works with it.

If NEC ESMPRO Agent cannot be installed to the server, you can install Express Report Service(MG) into NEC ESMPRO Manager instead of it.

For details about Express Report Service(MG), see *"Express Report Service(MG) Installation Guide"* in EXPRESSBUILDER.